

SUZUKI

FB100

SERVICE MANUAL

99500-30002-01E

(英)

FOREWORD

This service manual has been specially prepared to provide all the necessary information for the proper maintenance and repair of the FB100. The FB100 is a new type of motorcycle that has technical features such as:

** Gear shifting clutch system*

The FB100 fits the needs of a wide variety of motorcycle users. Those who will be servicing this motorcycle should carefully review this manual before performing any repairs or services.

This manual contains up-to-date information at the time of its issue. Later made modification and changes will be explained to each SUZUKI distributor in respective markets, to whom you are kindly requested to make query about up dated information, if any.

The FB100 motorcycles distributed in your country might differ in minor respects from the standard-specification and, if they do, it is because some minor modifications (which are of no consequence in most cases as far as servicing is concerned) had to be made to comply with the statutory requirements of your country.

SUZUKI MOTOR CORPORATION

*Motorcycle Department
Overseas Service Division*

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GENERAL INFORMATION

1

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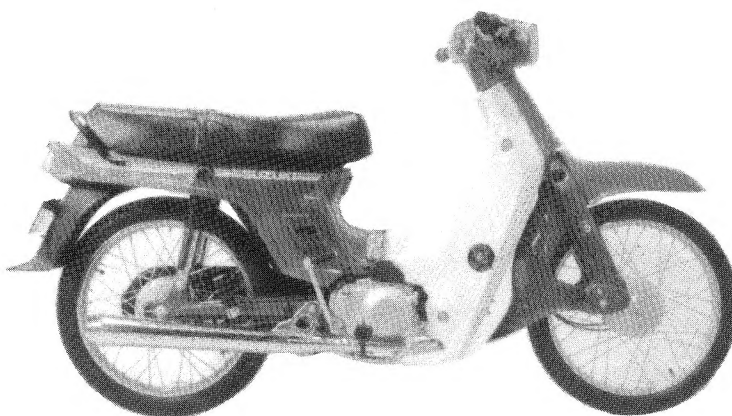
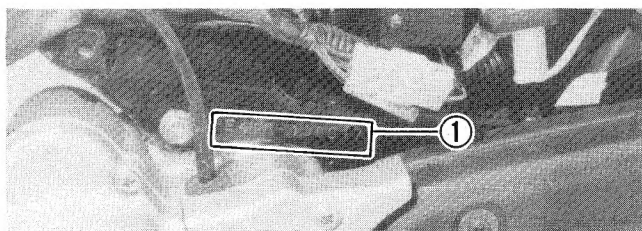
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MODEL IDENTIFICATION



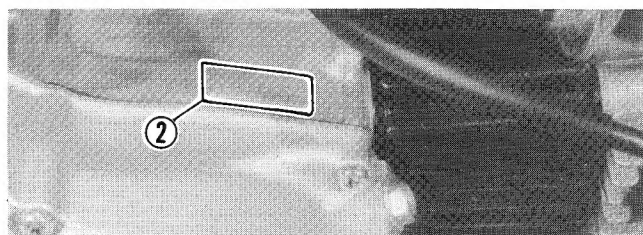
FRAME NUMBER

The frame serial number or VIN ① is stamped on the frame.



ENGINE NUMBER

The engine serial number ② is stamped on the right side crank case.



These numbers are required especially for registering the motorcycle and ordering spare parts.

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length	1 870 mm
Overall width	635 mm
Overall height	1 000 mm
Wheelbase	1 190 mm
Ground clearance	130 mm
Seat height	750 mm
Dry mass	76 kg

ENGINE

Type	Four-stroke, air-cooled, OHC
Bore	51.0 mm
Stroke	48.8 mm
Piston displacement	99 cm ³
Compression ratio	9.3 : 1
Carburetor	MIKUNI VM16SH, single
Air cleaner	Polyurethane foam element
Starter system	Kick
Lubrication system	Wet sump

TRANSMISSION

Clutch	Wet shoe, automatic, centrifugal type
Transmission	3-speed
Gearshift pattern	All-down
Primary reduction	3.823 (65/17)
Final reduction	2.285 (32/14)
Gear ratios, Low	3.400 (34/10)
2nd	1.812 (29/16)
Top	1.200 (24/20)
Drive chain	DAIDO D.I.D.428 or TAKASAGO RK428, 94 links

CHASSIS

Front suspension	Leading link, oil damped
Rear suspension	Swinging arm, oil damped
Steering angle	45°
Caster	27° 30'
Trail	76 mm
Turning radius	1.9 m
Front brake	Internal expanding
Rear brake	Internal expanding
Front tire size	2.25 – 17 4PR
Rear tire size	2.50 – 17 6PR

ELECTRICAL

Ignition type	SUZUKI "PEI"
Ignition timing	15° B.T.D.C. below 2 150 r/min and 30° B.T.D.C. above 3 500 r/min
Spark plug	N.D. CR6HS..... For E-02 NGK U20FS-L } For the others N.D. C6HA }
Battery	12V 5 Ah/10 HR For E-02 6V 4 Ah/10 HR..... For the others
Generator	Flywheel magneto
Fuse	10A

CAPACITIES

Fuel tank including reserve	5.0 L
reserve	0.7 L
Engine oil	800 ml

FUEL AND OIL RECOMMENDATION

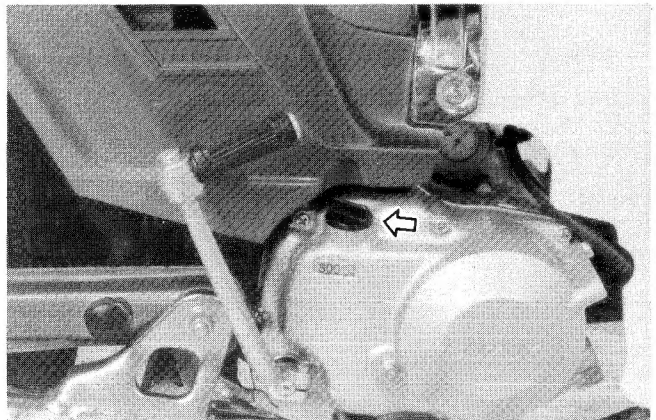
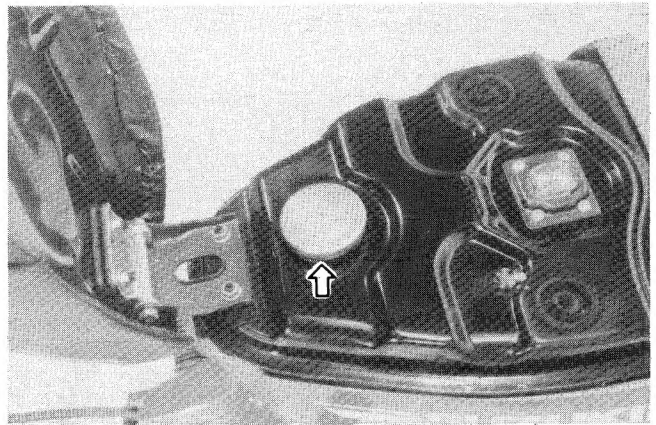
Be sure to use the specified fuel and oils. The followings are the specifications.

FUEL

Unlead or low-lead type gasoline is recommended. The gasoline should be at least 85 octane.

ENGINE OIL

Use only oils which are rated SE or SF under the API classification system. The viscosity rating should be SAE 10W/40. If an SAE 10W/40 motor oil is not available, select an alternative according to the chart.



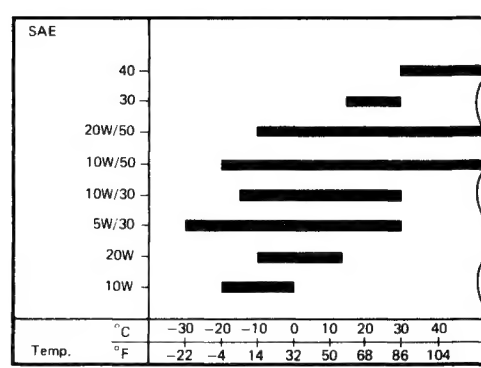
BREAKING-IN PROCEDURES

During manufacture only the best possible materials are used and all machined parts are finished to a very high standard but it is still necessary to allow the moving parts to "BREAK-IN" before subjecting the engine to maximum stresses. The future performance and reliability of the engine depends on the care and restraint exercised during its early life. The general rules are as follows:

- Keep to breaking-in throttle opening limit:

Up to 1 600 Km	Less than 4/5 throttle
----------------	------------------------

- Upon reaching an odometer reading of 1 600 km you can subject the motorcycle to full throttle operation.
- Do not maintain constant engine speed for an extended time period during any portion of the break-in. Try to vary the throttle position.



PRECAUTIONS AND GENERAL INSTRUCTIONS

Observe the following items without fail when disassembling and reassembling motorcycles.

- ☐ Be sure to replace packings, gaskets, circlips, O-rings and cotter pins with new ones.

CAUTION:

Never reuse a circlip after a circlip has been removed from a shaft, it should be discarded and a new circlip must be installed.

When installing a new circlip, care must be taken not to expand the end gap larger than required to slip the circlip over the shaft.

After installing a circlip, always insure that it is completely seated in its groove and securely fitted.

- ☐ Tighten cylinder head and case screws and nuts beginning from inside to out-side diagonally, to the specified tightening torque.
- ☐ Use special tools where specified.
- ☐ Use genuine parts and recommended oils.
- ☐ When 2 or more persons work together, pay attention to the safety of each other.
- ☐ After the reassembly, check parts for tightness and operation.
- ☐ Treat gasoline, which is extremely flammable and highly explosive, with greatest care. Never use gasoline as cleaning solvent.

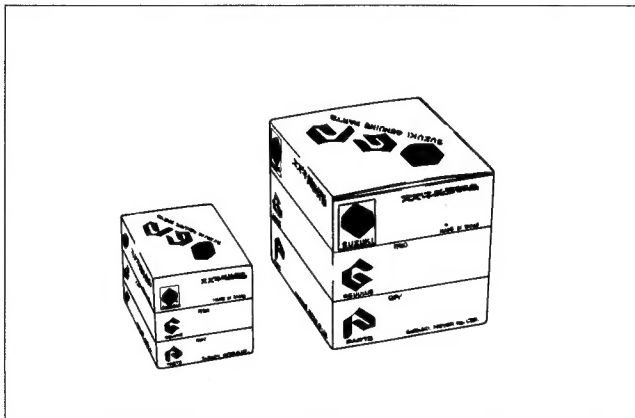
WARNING When personal safety of the rider is involved, disregard of the information could result in injury.

CAUTION For the protection of the motorcycle, the instruction or rule must be strictly adhered to.

NOTE Advice calculated to facilitate the use of the motorcycle is given under this heading.

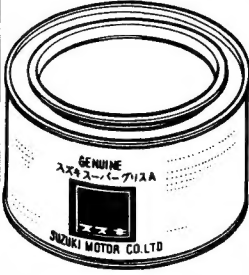


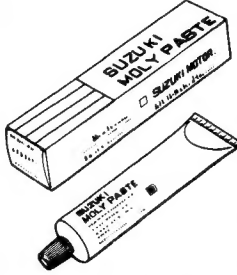
USE OF GENUINE SUZUKI PARTS



To replace any part of the machine, use a genuine SUZUKI replacement part. Imitation parts or parts supplied from any other source than SUZUKI, if used to replace SUZUKI parts can reduce the machine's performance and, even worse, could induce costly mechanical troubles.



SPECIAL MATERIAL

The materials shown are required for the maintenance works on the model FB100, and should be kept on hand for ready use. In addition, such standard materials as cleaning fluids, lubricants, etc., should also be available. Methods of use are discussed in the text of this manual on later pages.

Material	Use
 <p>SUZUKI SUPER GREASE "A" 99000-25010</p>	<ul style="list-style-type: none"> ● Oil seal ● Throttle grip ● Speedometer cable ● Speedometer gear box ● Wheel bearing ● Brake camshaft ● Steering stem bearing ● Starter cable
 <p>SUZUKI BOND No. 1215 99000-31110</p>	<ul style="list-style-type: none"> ● Crankcase mating surface
 <p>THREAD LOCK "1342" 99000-32050</p>	<ul style="list-style-type: none"> ● Gear shifting cam stopper bolt ● Countershaft bearing retainer ● Starter securing screw ● Oil pump securing bolt
 <p>SUZUKI MOLY PASTE 99000-25140</p>	<ul style="list-style-type: none"> ● Piston pin ● Valve ● Rocker arm shaft

Material	Use
 <p>THREAD LOCK SUPER "1303" 99000-32030</p>	<ul style="list-style-type: none"> ● Cam sprocket bolt ● Magneo rotor nut
 <p>THREAD LOCK "1322" 99000-32110</p>	<ul style="list-style-type: none"> ● Shift cam retainer ● Shift cam pin bolt ● Kick starter guide bolt

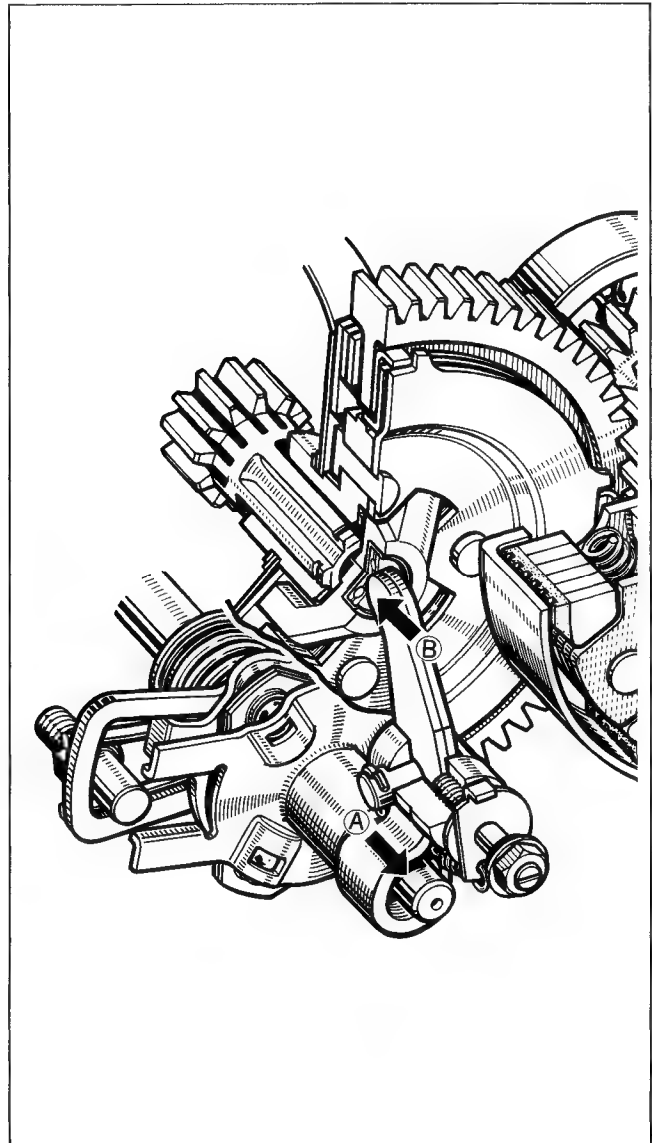
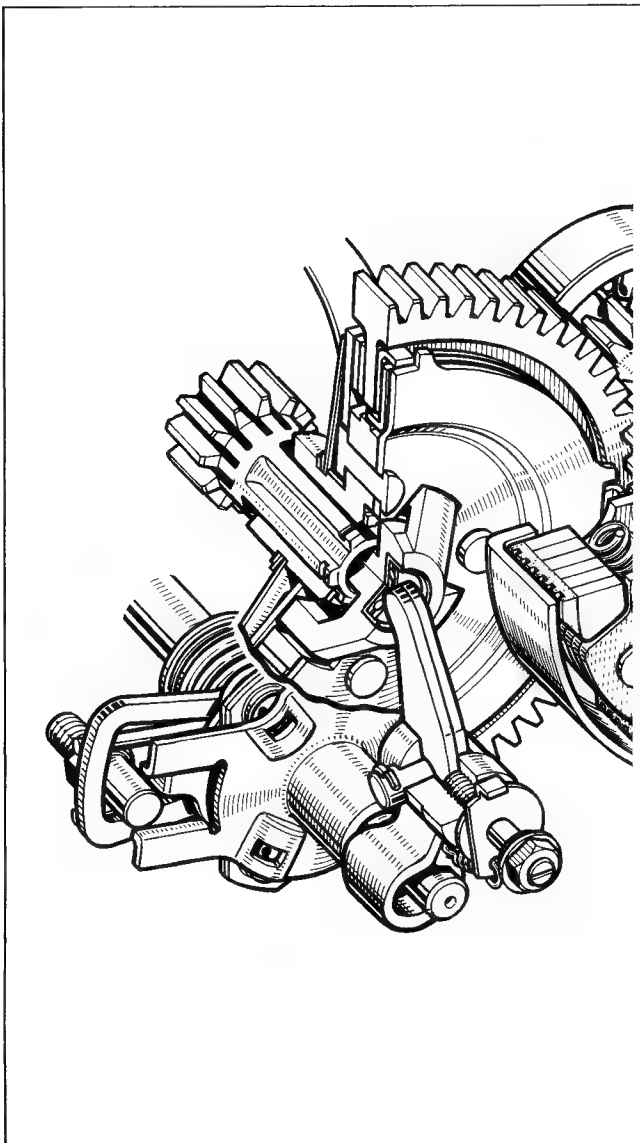
SPECIAL FEATURES

GEAR SHIFTING CLUTCH SYSTEM

The gearshift mechanism of the FB100 is constructed so that when the gears are up-shifted or down-shifted with the gearshift lever, the gearshifting clutch on the countershaft becomes disengaged by the movement of the gearshift shaft.

When the gearshift lever is depressed or pulled, the inner ball guide attached to the gearshift shaft rotates, pushing the steel balls which in turn push the outer ball guide in direction (A). This in turn allows the clutch release arm to push the clutch push piece mounted on the right end of the countershaft in direction (B). The clutch push piece then pushes the concaved clutch spring, causing the clutch drive and the driven plates to separate which disengages the 2nd clutch. By disengaging the 2nd clutch, the power is not transmitted from the primary driven gear to the countershaft, allowing a smooth gearshift.

When the foot is released from the gearshift lever, the gearshift shaft automatically returns to the original position by the action of the return spring. The clutch engages with the clutch spring and the power transmitted to the primary driven gear is in turn transmitted to the countershaft via clutch drive and driven plates to separate which disengages the gearshifting clutch. By disengaging this clutch, the power is not transmitted from the primary driven gear to the countershaft, allowing a smooth gearshift.



PERIODIC MAINTENANCE AND TUNE-UP PROCEDURES

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PERIODIC MAINTENANCE SCHEDULE

The chart below lists the recommended intervals for all the required periodic service work necessary to keep the motorcycle operating at peak performance and economy.

NOTE:

More frequent servicing may be performed on motorcycles that are used under severe conditions.

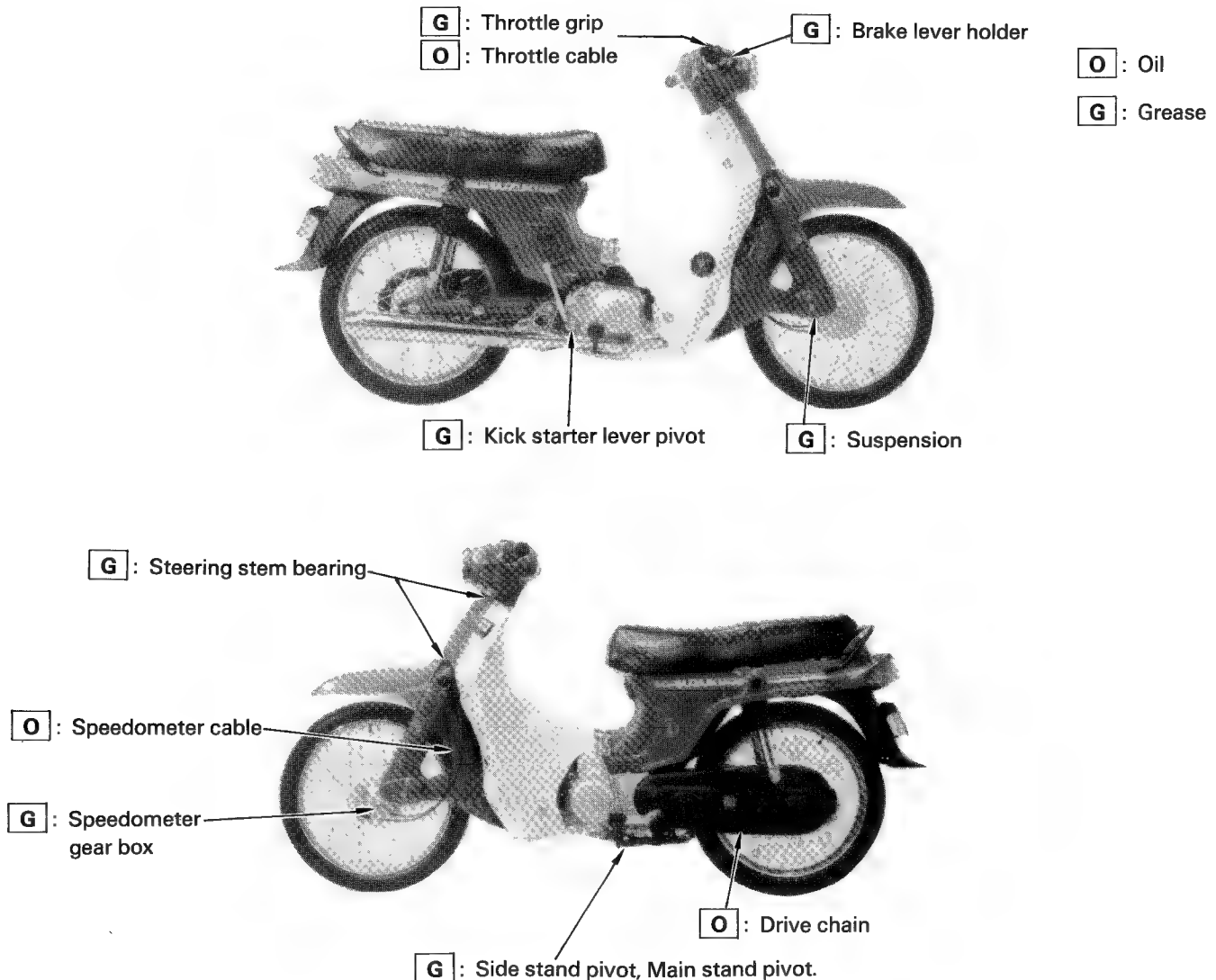
PERIODIC MAINTENANCE CHART

INTERVAL: This interval should be judged by odometer reading or months, whichever comes first.	km	1000	4000	8000
	months	5	20	40
Battery		–	I	I
Cylinder head nuts and exhaust pipe bolts		T	T	T
Valve clearance		I	I	I
Spark plug		–	C	R
Air cleaner		–	C	C
Carburetor		I	I	I
Fuel line		I	I	I
		Replace every 4 years		
Engine oil		R	R	R
Drive chain		I	I	I
		Clean and lubricate every 1000 km		
Brake		I	I	I
Steering		I	I	I
Tire		I	I	I
Chassis bolts and nuts		T	T	T

NOTE: T = Tighten, I = Inspect, R = Replace, C = Clean

LUBRICATION POINT

Proper lubrications is important for smooth operation and long life of each working part of the motorcycle and also for safe riding. It is a good practice to oil the machine after a long rough ride and after getting it wet in the rain or after washing it. Major oiling points are indicated below.



NOTE:

- * Before lubricating each part, clean off any rusty sports and wipe off any grease, oil, dirt or grime.
- * Lubricate exposed parts which are subject to rust, with a rust preventative spray whenever the motorcycle has been operated under wet or rainy conditions. If the spray is unavailable, use either oil or grease.

WARNING:

Be careful not to apply too much grease to the brake cam shaft. If grease gets on the linings, brake slippage will result.

MAINTENANCE AND TUNE-UP PROCEDURES

This section describes the servicing procedures for each item of the Periodic Maintenance requirements.

BATTERY

Inspect 4000 km (20 months), 8000 km (40 months)

- The battery must be removed to check the electrolyte level and specific gravity.
- Remove the right frame cover.
- Remove battery \ominus and \oplus leads at the battery terminals.
- Remove battery from the frame.
- Check electrolyte for level and specific gravity. Add distilled water, as necessary, to keep the surface of the electrolyte above the MIN. level line but not above the MAX. level line.

For checking specific gravity, use a hydrometer to determine the charged condition.

09900-28403

Hydrometer

Standard specific gravity

1.28 at 20°C

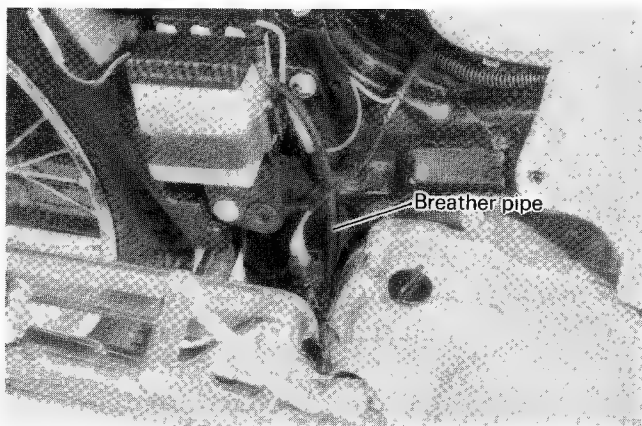
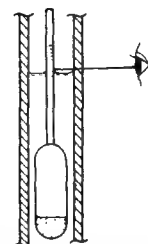
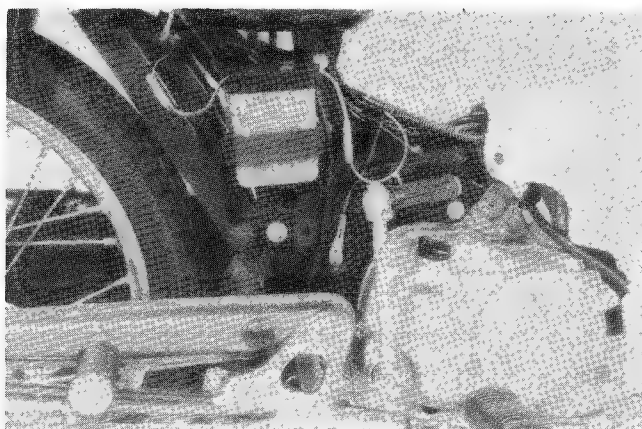
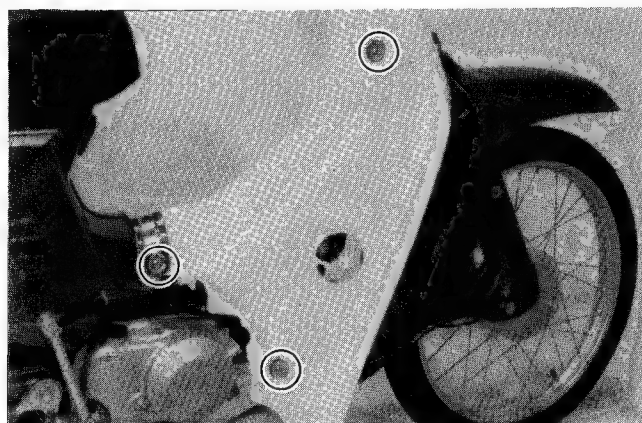
An S.G. reading of 1.22 (at 20°C) or under means that the battery needs recharging off the machine: Take it off and charge it from a recharger. Charging the battery in place can lead to failure of the regulator or rectifier.

- To install the battery, reverse the procedure described above.

CAUTION:

When installing the battery lead wires fix the \oplus lead first and \ominus lead last.

- Make sure that the breather pipe is tightly secured and undamaged, and is routed as shown in the photograph.



CYLINDER HEAD NUTS AND EXHAUST PIPE BOLTS

Tighten 1000 km (5 months), 4000 km (20 months), 8000 km (40 months)

Cylinder head nuts, when they are not tightened to the specified torque, may result in leakage of the compressed mixture and reduce output. First loosen the nuts and tighten the 4 nuts evenly one by one in stages until each one is tightened to the specified torque. Tighten the nuts in the order indicated.

Tightening torque

Cylinder head nut	18 – 22 N·m (1.8 – 2.2 kg·m)
Exhaust pipe bolt	8 – 12 N·m (0.8 – 1.2 kg·m)
Swing arm pivot shaft nut	25 – 40 N·m (2.5 – 4.0 kg·m)

VALVE CLEARANCE

Inspect 1000 km (5 months), 4000 km (20 months), 8000 km (40 months)

Excessive valve clearance results in valve noise and insufficient valve clearance results in valve damage and reduced power. At the distances indicated above, check and adjust the clearance to the following specification.

Valve clearance specifications

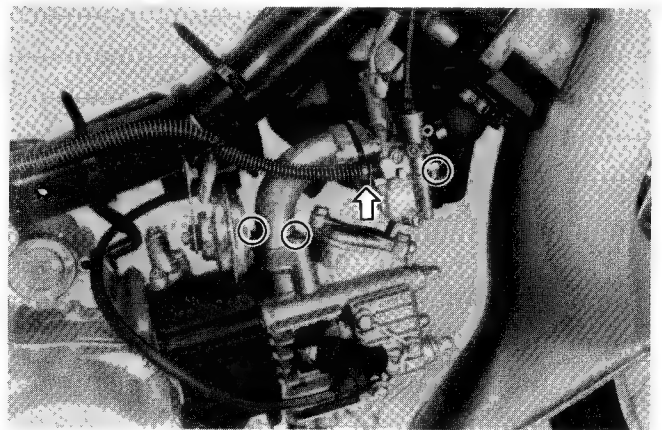
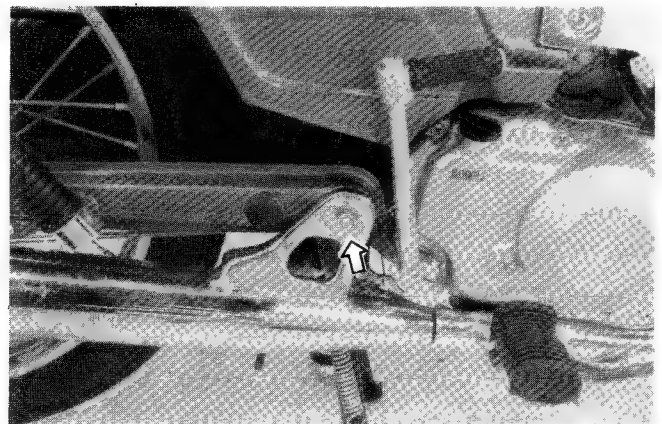
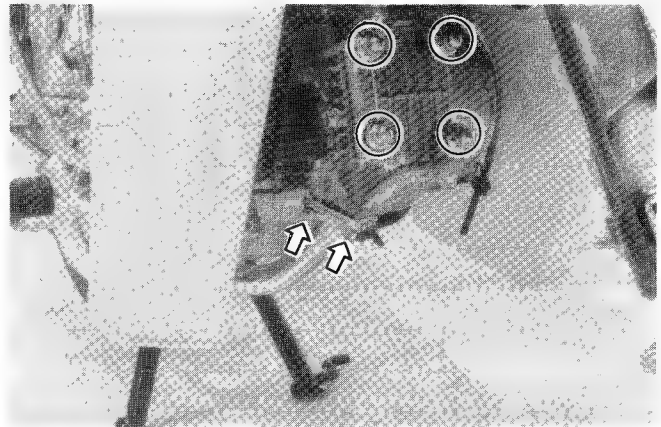
IN. and EX.	0.03 – 0.07 mm
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The procedure for adjusting the valve clearance is as follows:

NOTE:

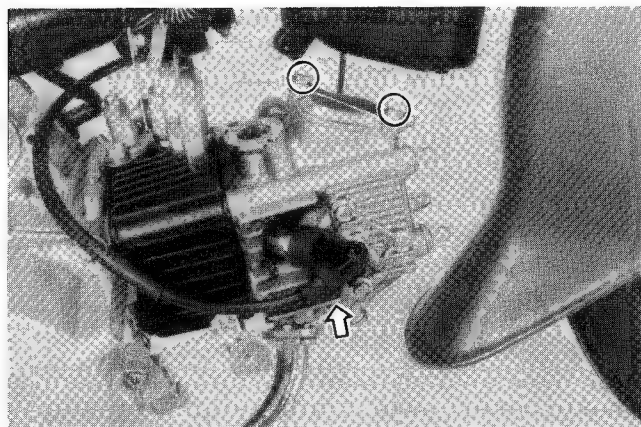
Valve clearance is to be checked when the engine is cold.

Both the intake and exhaust valves must be checked and adjusted when the piston is at Top-Dead-Center (TDC) of the compression stroke.

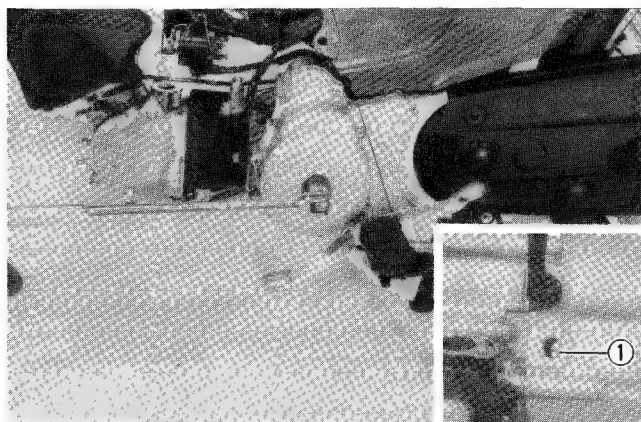


- Remove the leg shield.
- Remove the carburetor with intake pipe, after disconnecting fuel hose.

- Remove spark plug, valve inspection caps and valve timing inspection plug.

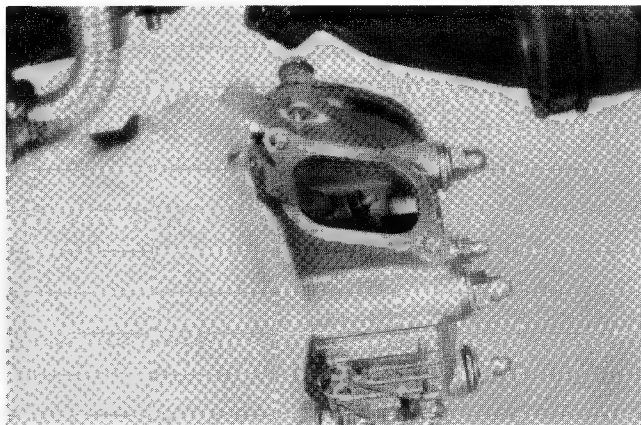


- Remove the magneto cover cap and rotate the magneto rotor with box wrench to set the piston at (TDC) of the compression stroke. (Rotate the rotor until the "T" line ① on the rotor is aligned with the center of hole on the magneto cover.)



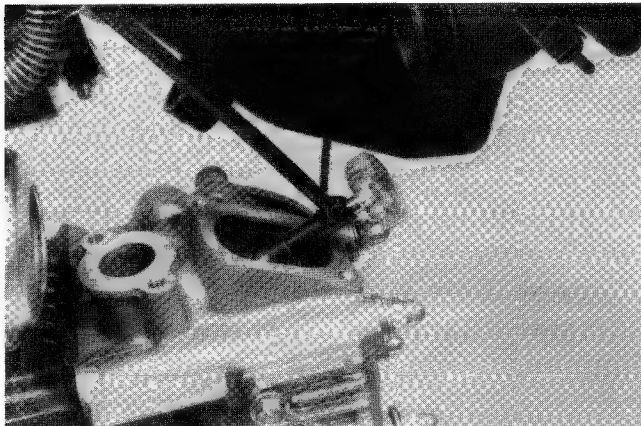
- Insert the thickness gauge to the clearance between the valve stem end and the adjusting screw on the rocker arm.

Thickness gauge	09900 – 20803
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- If clearance is off the specification, bring it into the specified range by using the special tool.
- Reinstall spark plug, valve inspection caps, valve timing inspection plug and magneto cover cap.

09917-13310	Tappet adjust wrench
09917-14910	Tappet adjust driver



- When installing the intake pipe, do not forget the O-ring ①.

SPARK PLUG

Clean 4 000 km (20 months)
Replace 8 000 km (40 months)

Neglecting the spark plug eventually leads to difficult starting and poor performance. If the spark plug is used for a long period, the electrode gradually burns away and carbon builds up along the inside part. In accordance with the Periodic Inspection chart, the plug should be removed for inspection, cleaning and to reset the gap.

- Carbon deposits on the spark plug will prevent good sparking and cause misfiring. Clean the deposits off periodically.
- If the center electrode is fairly worn down, the plug should be replaced and the plug gap set to the specified gap using a thickness gauge.

09900-20803	Thickness gauge
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Spark plug gap	0.6 – 0.7 mm
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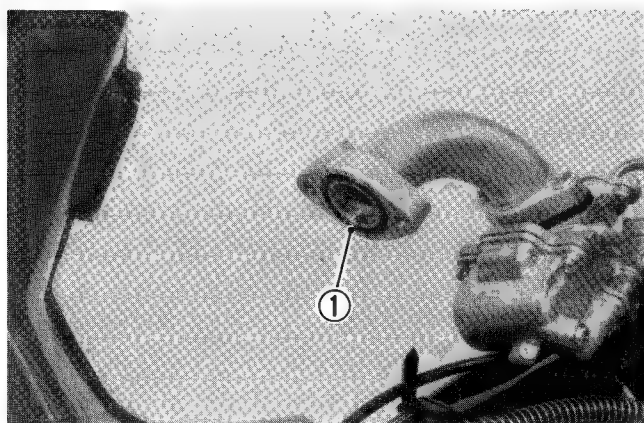
- Check spark plug for burnt condition. If abnormal, replace the plug as indicated below.

(): For E-02

NGK	Nippon Denso	Remarks
C7HA (CR7HS)	U22 FS-L (—)	If the standard plug is apt to overheat, replace with this plug.
C6HA (CR6HS)	U20 FS-L (—)	Standard

- Tighten the spark plug in the cylinder head with the specified torque.

Spark plug tightening torque	10 – 12 N·m (1.0 – 1.2 kg·m)
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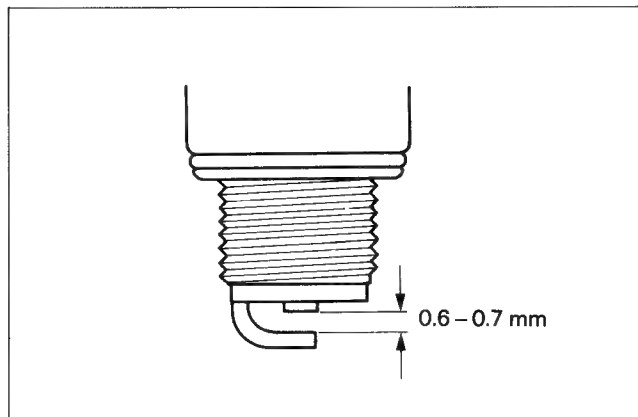
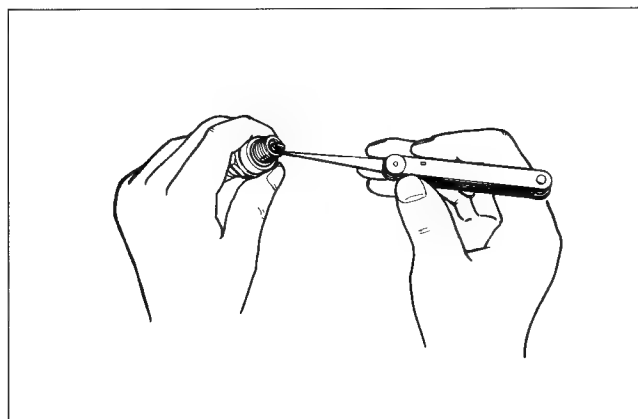


NOTE:

To check the spark plug, first make sure that the fuel tank contains unleaded gasoline, and if plug is either sooty with carbon or burnt white, replace it.

NOTE:

Confirm the thread size and reach when replacing the plug.



AIR CLEANER

Clean 4 000 km (20 months), 8 000 km (40 months)

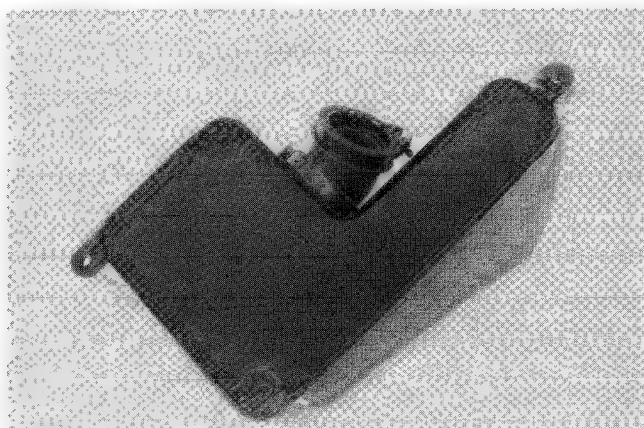
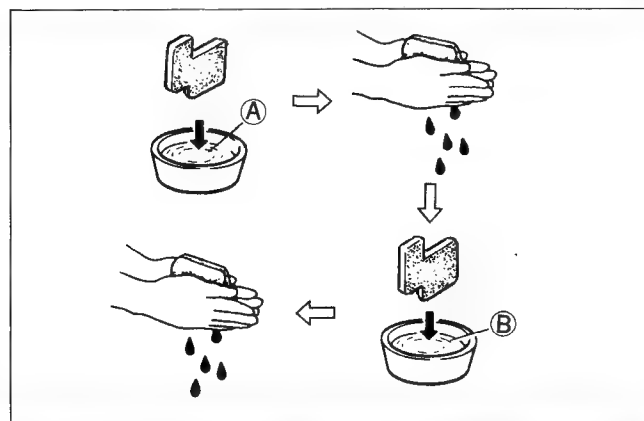
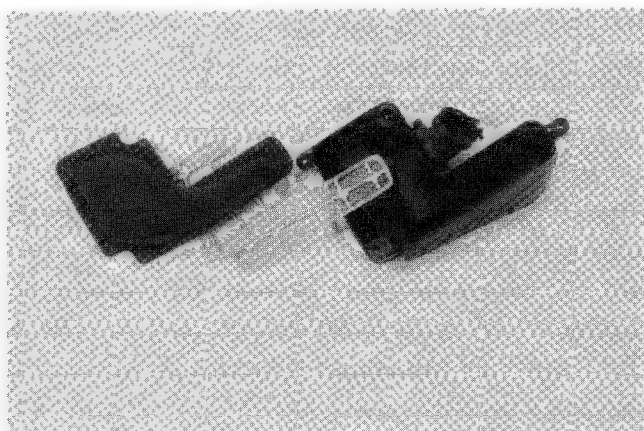
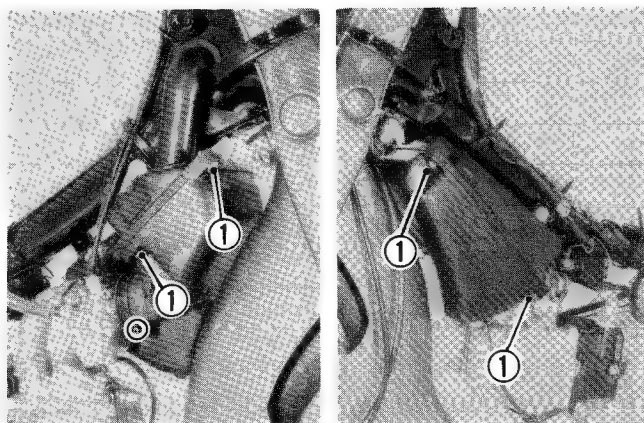
If the air cleaner is clogged with dust, intake resistance will be increased with a resultant decrease in output and an increase in fuel consumption. Check and clean the element in the following manner.

- Remove the four screws ①.
- Loosen the carburetor clamp screw.
- Take off the air cleaner cover.
- Remove the element from the case.
- Fill a washing pan of a proper size with nonflammable cleaning solvent. Immerse the element in the cleaning solvent and wash it clean.
- Squeeze the cleaning solvent out of the washed element by pressing it between the palms of both hands: do not twist or wring the element or it will develop tears.
- Immerse the element in motor oil, and squeeze the oil out of the element leaving it slightly wet with oil.
- Fit the cleaner element to frame properly.

CAUTION:

- * Before and during the cleaning operation, inspect the element for tears. A torn element must be replaced.
- * Be sure to position the element snugly and correctly, so that no incoming air will bypass it. Remember, rapid wear of piston rings and cylinder bore is often caused by a defective or poorly fitted element.

- Ⓐ Non-flammable cleaning solvent
Ⓑ Motor oil



CARBURETOR

Inspect 1000 km (5 months), 4000 km (20 months), 8000 km (40 months).

THROTTLE CABLE PLAY

- Remove the leg shield.
 - Loosen the lock nut ① and adjust the cable slack by turning adjuster ② in or out to obtain the following cable play.
- After adjusting play, tighten the lock nut ①.

Cable play	0.5 – 1.0 mm
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ENGINE IDLE R/MIN

- Adjust the throttle cable play.
- Warm up the engine.

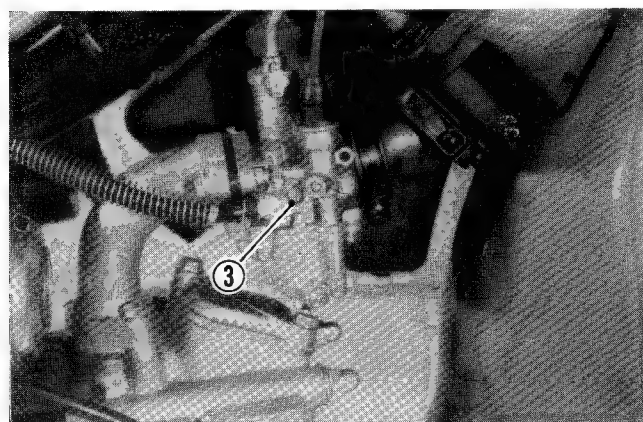
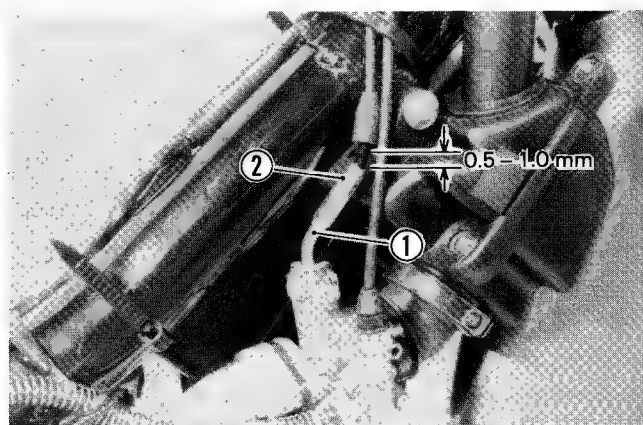
NOTE:

A warm engine means an engine has been run for 10 minutes.

- Adjust the throttle stop screw ③ to obtain the idle r/min as follows.

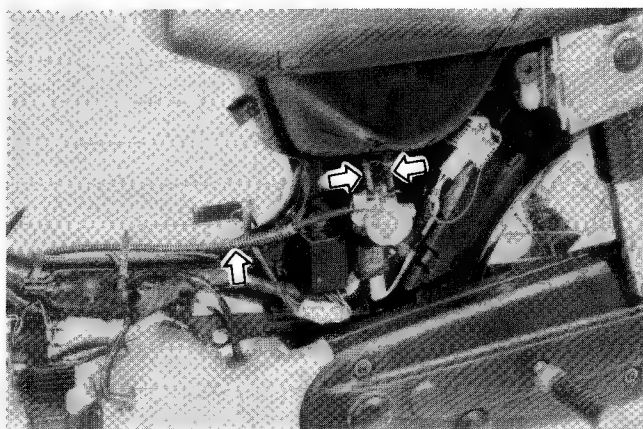
Idle r/min	1400 ± 150 r/min
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- Finally adjust the throttle cable play.



FUEL LINE

Inspect 1000 km (5 months), 4000 km (20 months), 8000 km (40 months).
Replace every 4 years.



ENGINE OIL

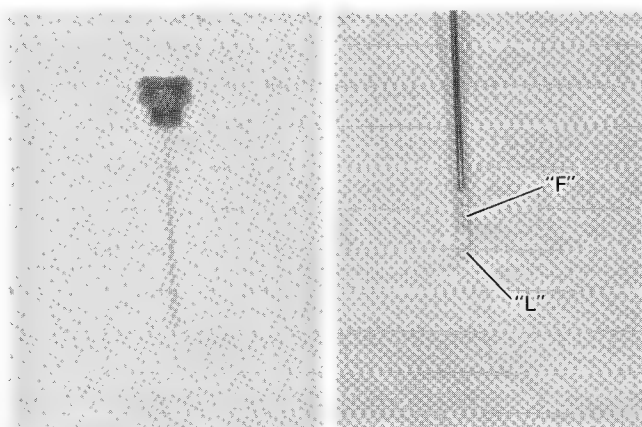
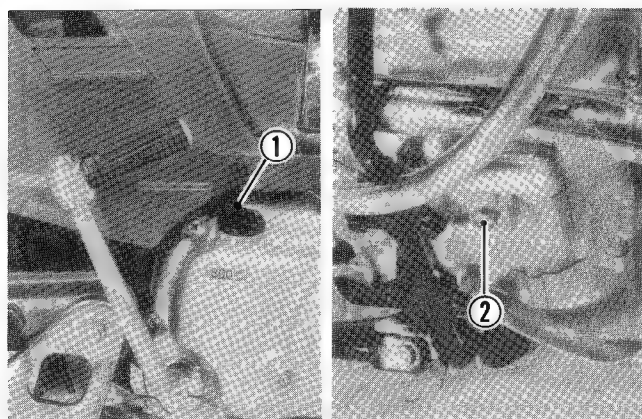
Replace 1000 km (5 months), 4000 km (20 months), 8000 km (40 months)

After a long period of use, the engine oil will deteriorate and quicken the wear of sliding and interlocking surfaces. Replace the transmission oil periodically following the procedure below.

- Start the engine to warm up the oil, this will facilitate draining of oil. Shut off the engine.
- Unscrew the oil filler cap ① and drain plug ②, and drain the oil completely.
- Tighten the drain plug.
- Supply a good quality SAE 10W/40 multigrade motor oil.
- Check the oil level with the dipstick.

The level found in the dipstick should be between "L" (Low) and "F" (Full) lines.

Capacity	800 ml
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DRIVE CHAIN

**Inspect 1000 km (5 months), 4000 km (20 months), 8000 km (40 months),
Clean and lubricate every 1000 km.**

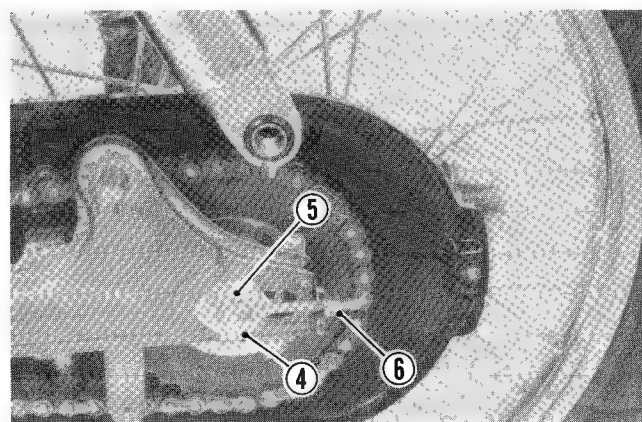
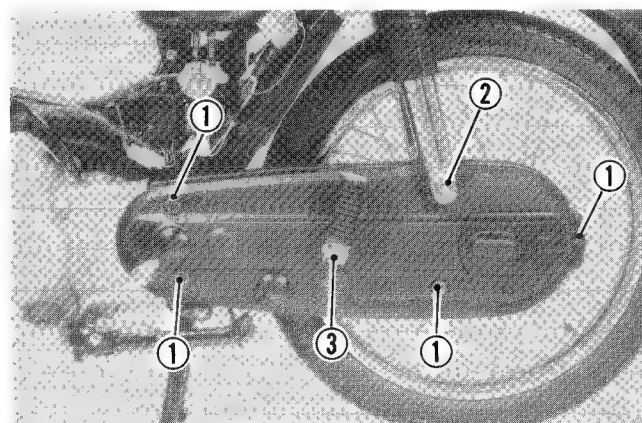
Visually inspect the drive chain for the below listed possible malconditions.

- Loose pins
- Damaged rollers
- Rusted links
- Twisted or seized links
- Excessive wear

If any defects are found, the drive chain must be replaced.

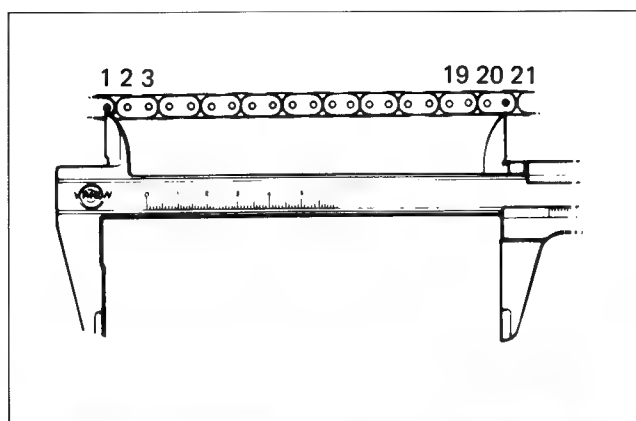
CHECKING

- Remove the four screws ①, rear shock absorber lower nut ② and pillion footrest ③, and take off the outer chain covers.
- Loosen the axle nut ④ and axle sleeve nut ⑤ after pulling off cotter pin.
- Tense the drive chain fully by tightening the adjuster nuts ⑥.



- Count out 21 pins (20-pitch) on the chain measure the distance between the two. If the distance exceed following limit, the chain must be replaced.

Service Limit	259 mm
---------------	--------



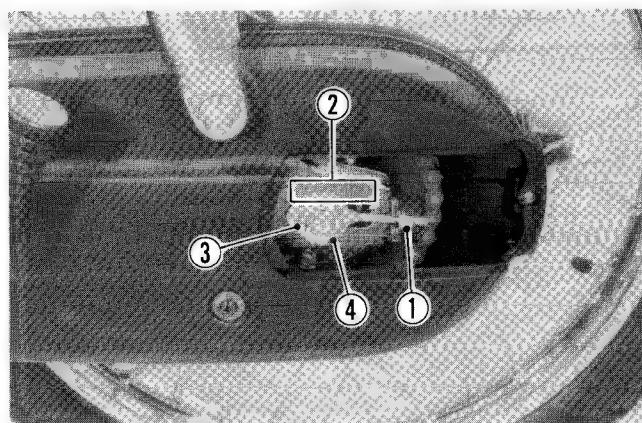
CLEANING AND LUBRICATING

Wash the drive chain in cleaning solvent and lubricate it with chain lube or motor oil. If the motorcycle operates under dusty conditions, frequent rapid acceleration or at sustained high speeds, the drive chain should be cleaned and lubricated more often.



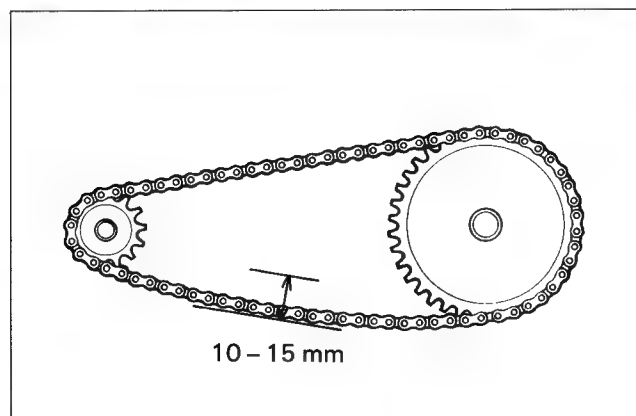
ADJUSTING

- Loosen the adjusters ① until the chain has 10 – 15 mm of sag at the middle between engine and rear sprockets. The mark ② on both chain adjusters must be at the same position on the scale to ensure that the front and rear wheels are correctly aligned.
- Tighten the axle sleeve nut ③ and axle nut ④ after adjusting the drive chain and tighten the adjuster nuts ①.



Tightening torque:

Rear axle sleeve nut	45 – 60 N·m (4.5 – 6.0 kg-m)
Rear axle nut	27 – 43 N·m (2.7 – 4.3 kg-m)

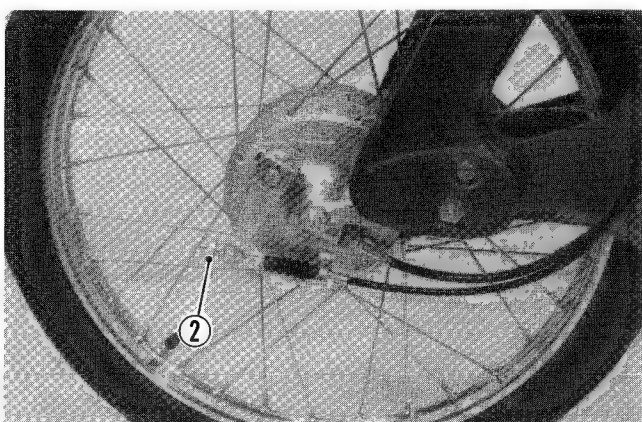
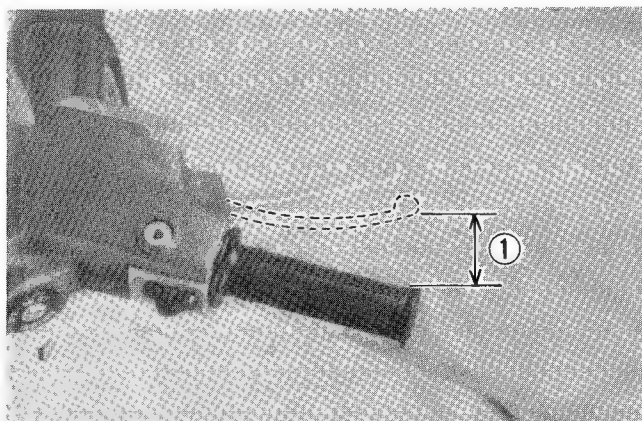


BRAKE

Inspect 1000 km (5 months), 4000 km (20 months), 8000 km (40 months)

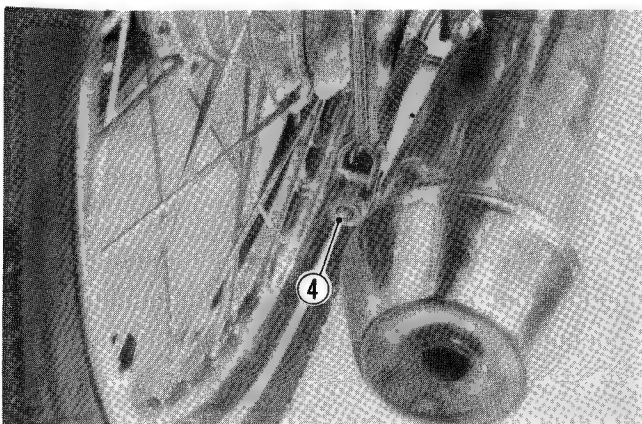
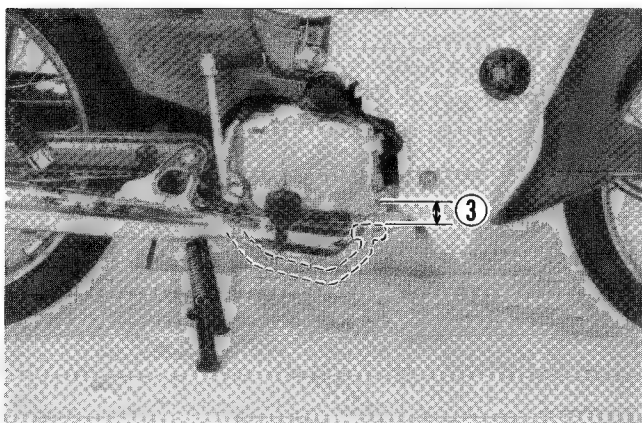
FRONT BRAKE ADJUSTING

Measure the clearance ① between the brake lever end and throttle grip when brake is fully applied. Adjust the clearance ① to 20 – 30 mm by turning the adjusting nut ②.



REAR BRAKE ADJUSTING

Adjust the free travel ③ to 20 – 30 mm by turning the adjusting nut ④.

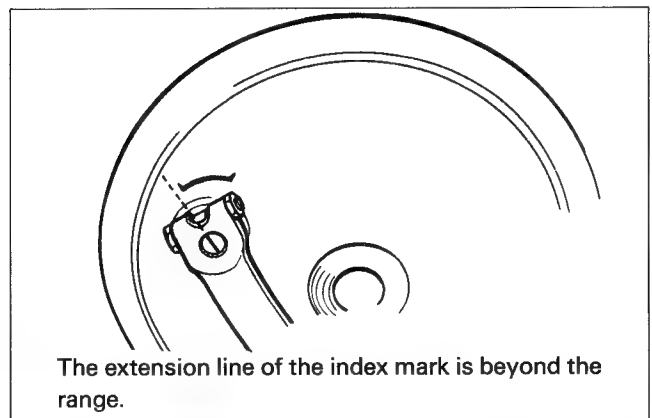
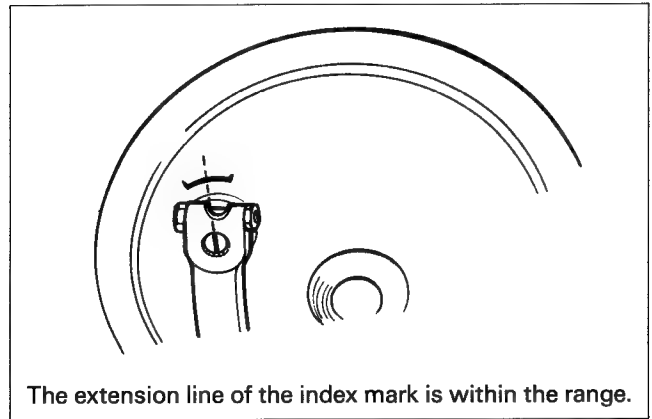


BRAKE SHOE WEAR

This motorcycle is equipped with brake lining wear limit indicator on front and rear. As shown in Fig., at the condition of normal lining wear, the extension line of the index mark on the brake camshaft should be within the range embossed on the brake panel with brake on.

To check wear of the brake lining, perform the following steps.

- First check if the brake system is properly adjusted.
- While operating the brake, check to see that the extension line of the index mark is within the range on the brake panel.
- If the index mark is beyond the range as shown in the Fig., the brake shoe assembly should be replaced with a new set of shoes.

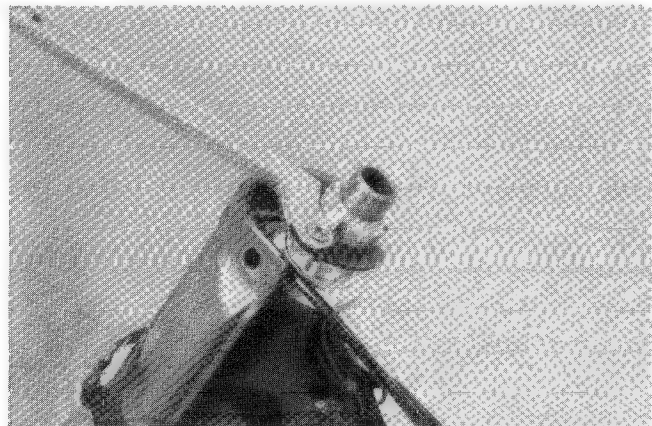
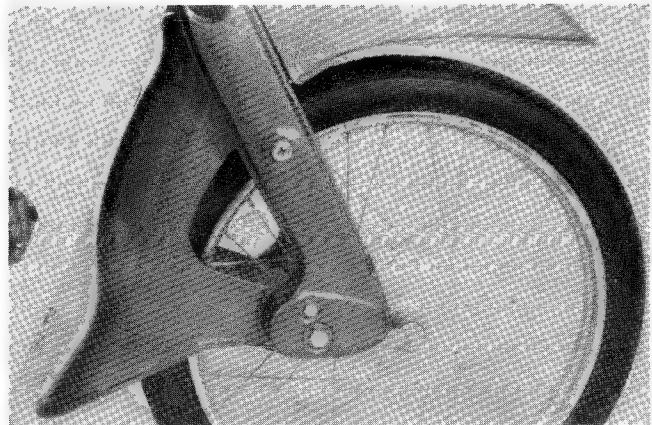


STEERING

Inspect 1000 km (5 months), 4000 km (20 months), 8000 km (40 months)

Steering should be adjusted properly for smooth manipulation of handlebars and safe running. Too stiff steering prevents smooth manipulation of handlebars and too loose steering will cause poor stability.

Check that there is no play in the front fork assembly by supporting the machine so that the front wheel is off the ground, with wheel straight ahead, grasp lower fork tubes near the axle and pull forward. If play is found, perform steering bearing adjustment as described in page 6-14 of this manual.



TIRE

Inspect 1000 km (5 months), 4000 km (20 months), 8000 km (40 months)

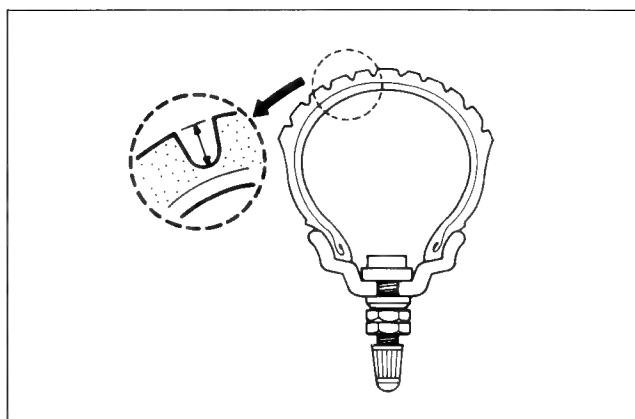
TIRE TREAD CONDITION

Operating the motorcycle with the excessively worn tires will decrease riding stability and consequently invite a dangerous situation. It is highly recommended to replace the tire when the remaining depth of tire tread reaches the following specifications.

Front and rear	1.6 mm
09900 – 20805	Tire depth gauge

TIRE PRESSURE

If the tire pressure is too high or too low, steering will be adversely affected and tire wear increased. Therefore, maintain the correct tire pressure for good roadability or shorter tire life will result. Cold inflation tire pressure is as follows.



Cold inflation tire pressure

ITEM	SOLO RIDING	DUAL RIDING
FRONT	175 kPa (1.75 kg/cm ²)	175 kPa (1.75 kg/cm ²)
REAR	225 kPa (2.25 kg/cm ²)	280 kPa (2.80 kg/cm ²)

CHASSIS BOLTS AND NUTS

Tighten 1000 km (5 months), 4000 km (20 months), 8000 km (40 months)

These bolts and nuts listed below are important safety parts. They must be loosened first and retightened, to the specified torque with a torque wrench.

TIGHTENING TORQUE

No	Item	N·m	kg-m
①	Front axle nut	27 – 43	2.7 – 4.3
②	Brake cam lever nut	5 – 8	0.5 – 0.8
③	Rear axle nut	27 – 43	2.7 – 4.3
④	Rear axle sleeve nut	45 – 60	4.5 – 6.0
⑤	Rear shock absorber bolt and nut	20 – 30	2.0 – 3.0

ENGINE

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COMPRESSION PRESSURE AND OIL PRESSURE

COMPRESSION PRESSURE

NOTE:

- * Before testing the engine for compression pressure, make sure that the cylinder head nuts and bolts are tightened to specified torque values and valves are properly adjusted.
- * Have the engine warmed up by idling before testing it.

Compression gauge	09915-64510
Adapter	09915-63310

- Remove spark plug.
- Fit the compression gauge to the plug hole, taking care to make the connection absolutely tight.
- Twist the throttle grip into wide-open position.
- Crank the engine several times with the kick starter, and read the highest gauge indication as the compression of the cylinder.

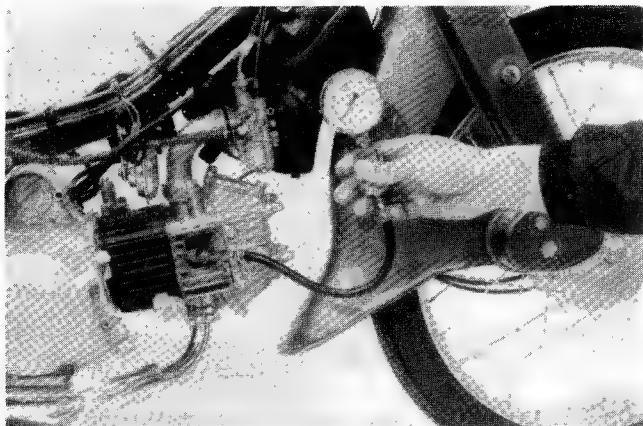
Compression pressure

Standard	Limit
12 – 16 kg/cm ²	10 kg/cm ²

A low compression pressure may indicate any of the following malfunctions:

- * Excessively worn cylinder wall
- * Worn piston or piston rings.
- * Piston rings stuck in the grooves
- * Poor seating contact of valves
- * Defective cylinder head gasket.

When the compression pressure noted is down to or below the limit indicated above, the engine must be disassembled, inspected and repaired as required.



OIL PRESSURE

- Install the oil pressure gauge ① in the position shown in the figure.
- Warm up the engine as follows.
Summer approx. 10 min. at 2000 r/min.
Winter approx. 20 min. at 2000 r/min.
- After the warming up operation, increase the engine speed to 3000 r/min, and read the oil pressure gauge.

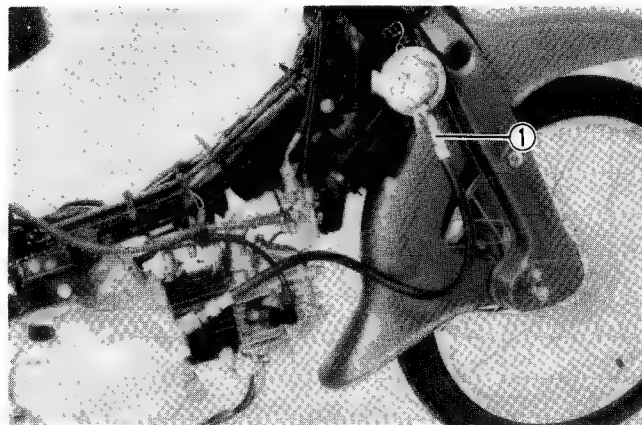
NOTE:

Engine oil must be warmed up to 60°C when checking the oil pressure.

Oil pressure

Above 0.2 kg/cm²
Below 0.4 kg/cm² at 3000 r/min.

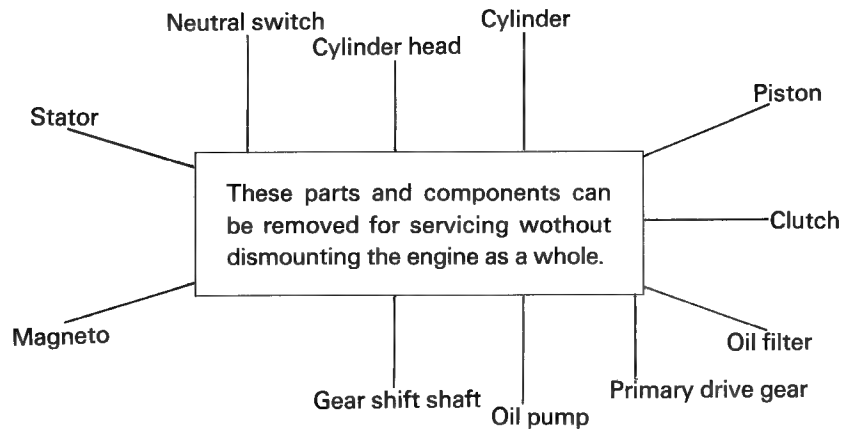
Oil pressure gauge	09915-74510
Adapter	09915-74531



If the oil pressure is lower or higher than the specifications, several causes may be considered.

- * Low oil pressure is usually the result of a clogged oil filter, oil leakage from the oil passageway, damaged oil seal, a defective oil pump or a combination of these items.
- * High oil pressure is usually caused by a engine oil which is too heavy a weight, a clogged oil passage, improper installation of the oil filter or a combination of these items.

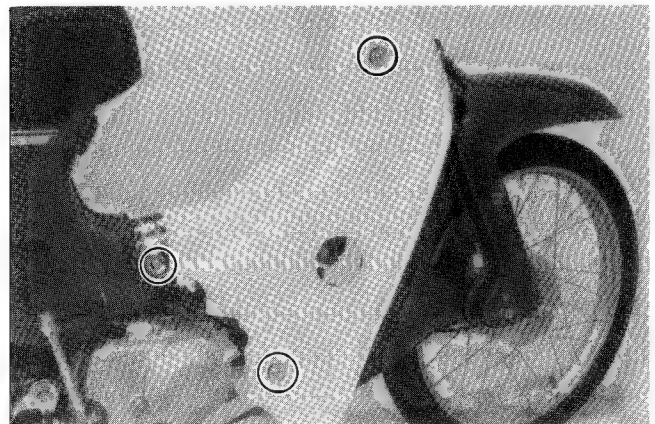
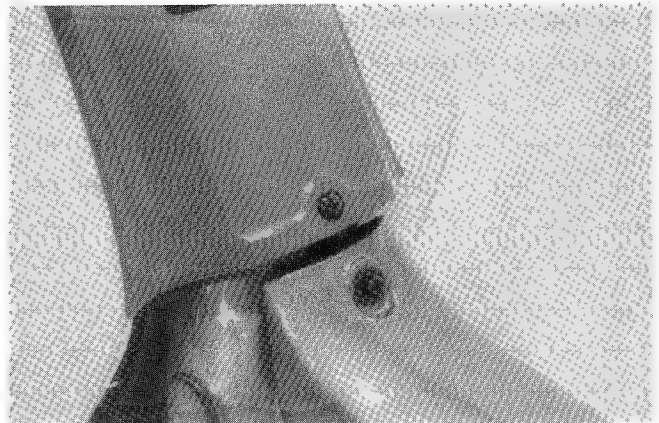
ENGINE COMPONENTS REMOVAL WITH THE ENGINE IN PLACE



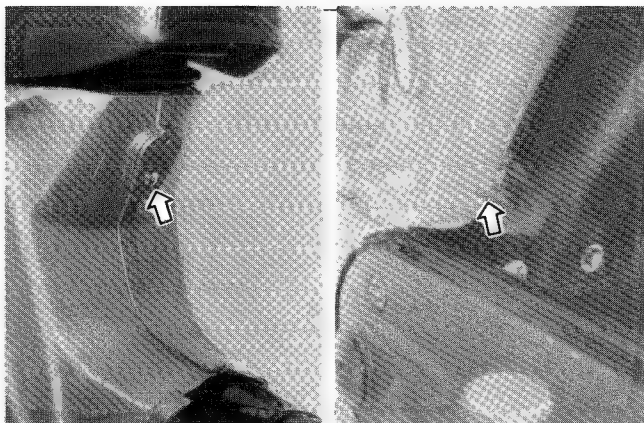
ENGINE REMOVAL

Before taking the engine out of the frame, wash the engine with a steam cleaner and drain engine oil. The procedure of engine removal is sequentially explained in the following steps, and engine installation is effected by reversing the removal procedure.

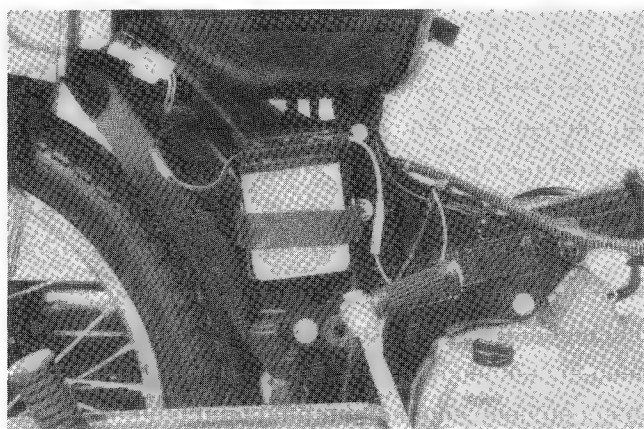
- Remove the steering head cover.
- Remove the leg shield.



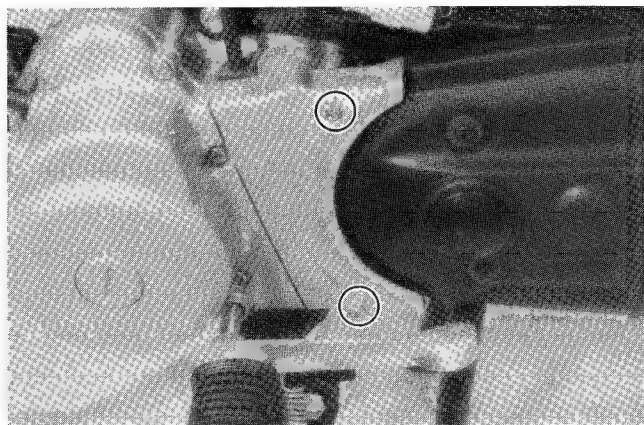
- Remove the left and right frame cover.



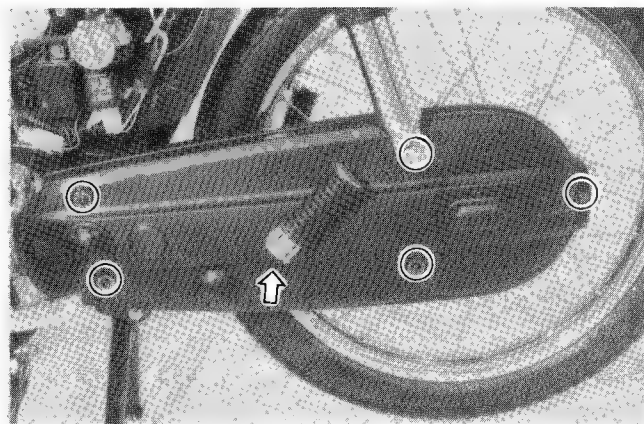
- Remove the battery.



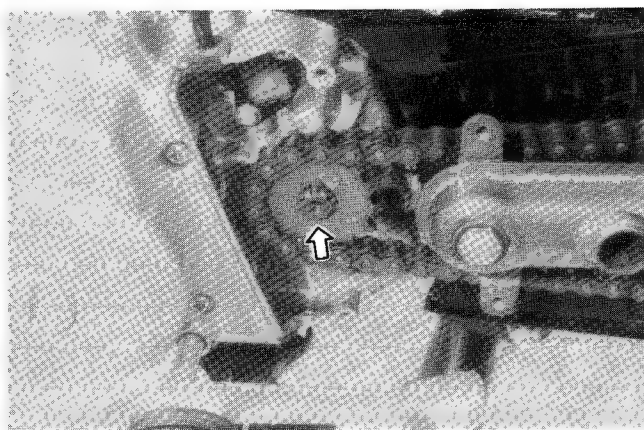
- Remove the engine sprocket cover.



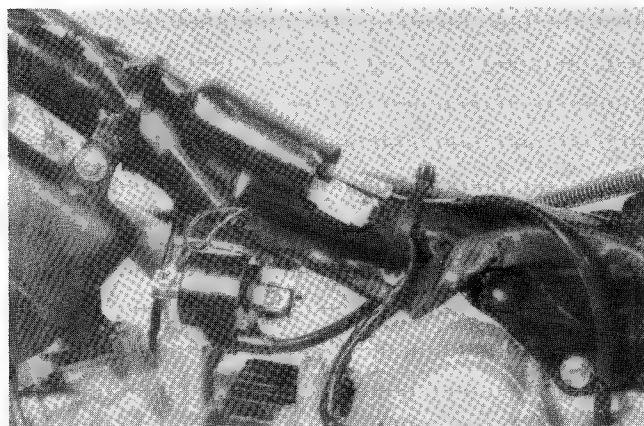
- Remove the chain cover by loosening four screw, pillion footrest and left rear shock absorber lower nut.



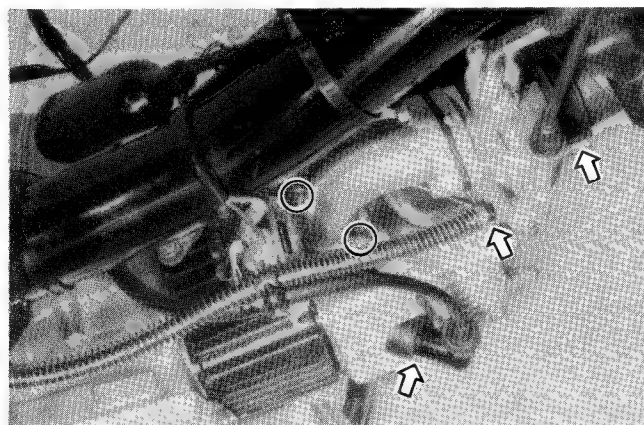
- Remove the engine sprocket by removing the cir-clip.



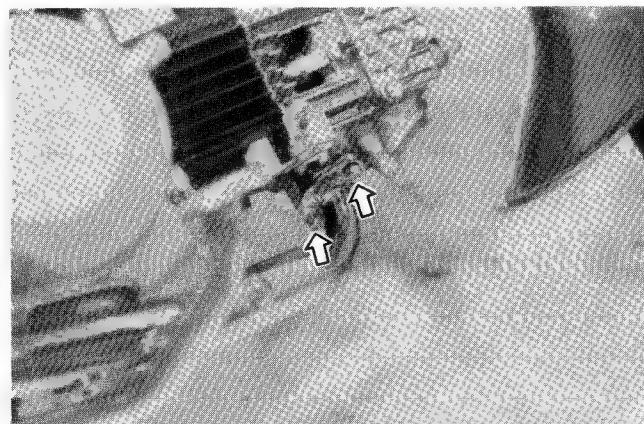
- Disconnect the magneto lead wire and neutral indicator lead wire.

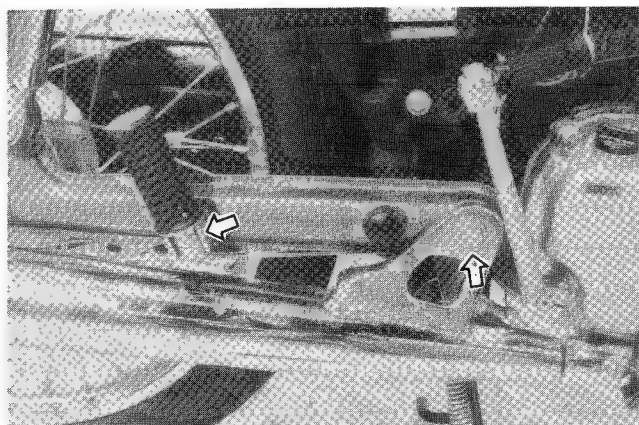


- Remove the carburetor with intake pipe by loosening the intake pipe bolt and carburetor clamp screw.
- Disconnect the fuel hose and spark plug cap.

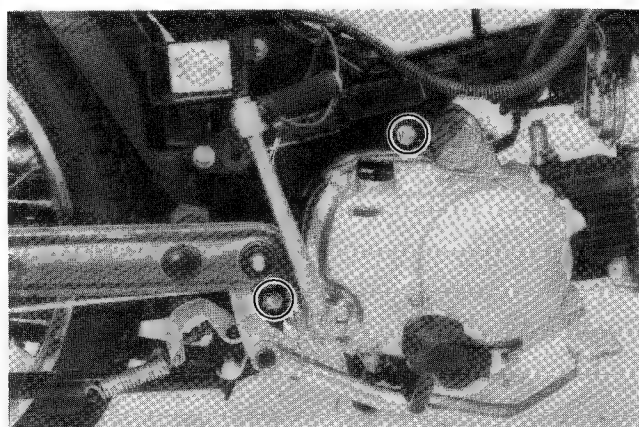


- Remove the right pillion footrest first and take off the muffler.





- Remove the engine mounting bolts and dismount the engine.



ENGINE REINSTALLATION

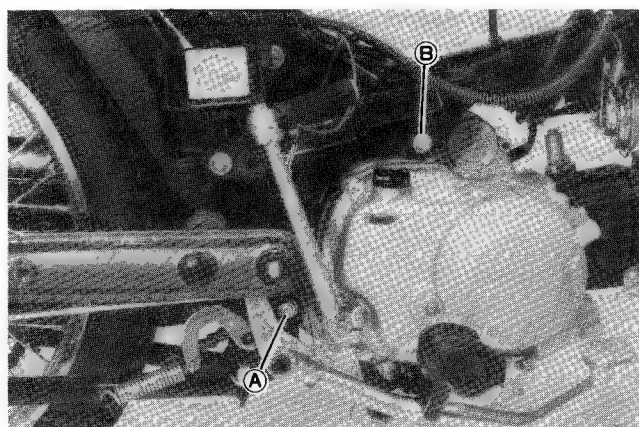
- For remounting the engine, reverse the order of engine removal and take the following additional steps.
- Install the engine mounting bolts and tighten the nuts to the specification.

Tightening torque	28 – 34 N·m
(A) (B)	(2.8 – 3.4 kg-m)

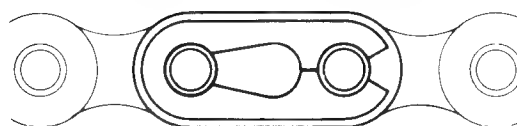
- Install the drive chain.

CAUTION:

The drive chain joint clip should be attached in the way that the slit end will face opposite to the direction of rotation.

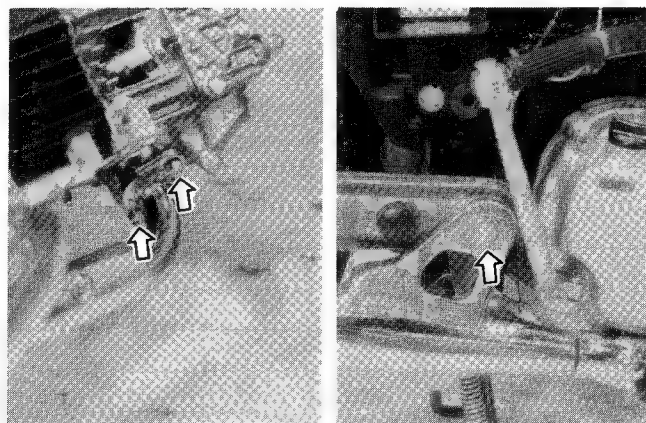


← Direction of travel

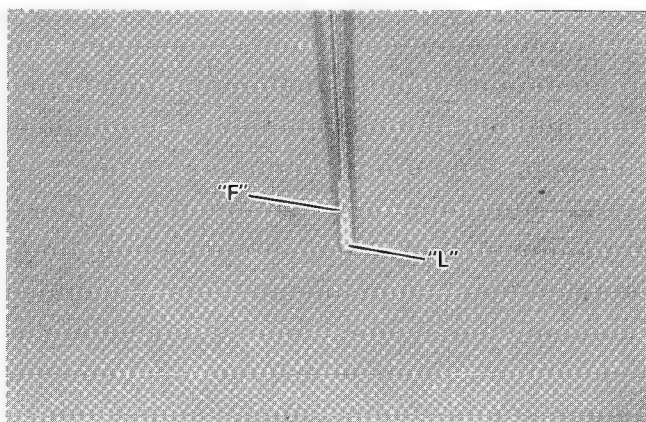


- Tightening the exhaust pipe bolts and muffler clamp to specified torque.

Tightening Torque	8 – 12 N·m (0.8 – 1.2 kg-m)
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- Pour 840 ml of engine oil SAE 10W/40 graded SE or SF into the engine after overhauling engine.
- Start up the engine and allow it run for several seconds at idle speed. About one minute after stopping engine, check oil level.
If the level is below the "L" mark, add oil until the level reaches the "F" mark.



CAUTION:

Check the wire, cable and hose routing (See page 7-20).

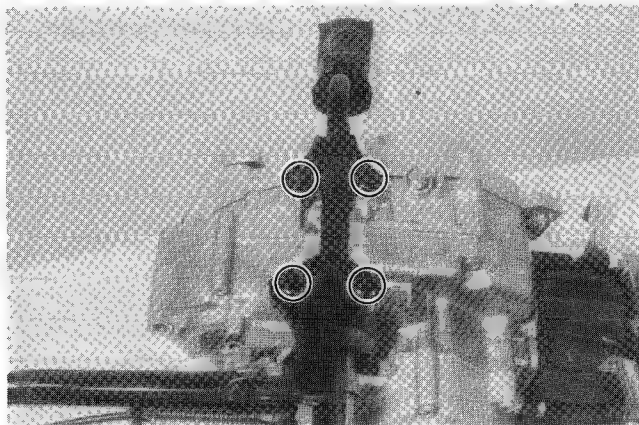
- After remounting the engine, following adjustments are necessary.

* Throttle cable	(Page: 2-8)
* Drive chain	(Page: 2-9)
* Rear brake pedal	(Page: 2-11)
* Idling speed	(Page: 2-8)
* Valve clearance	(Page: 2-4)

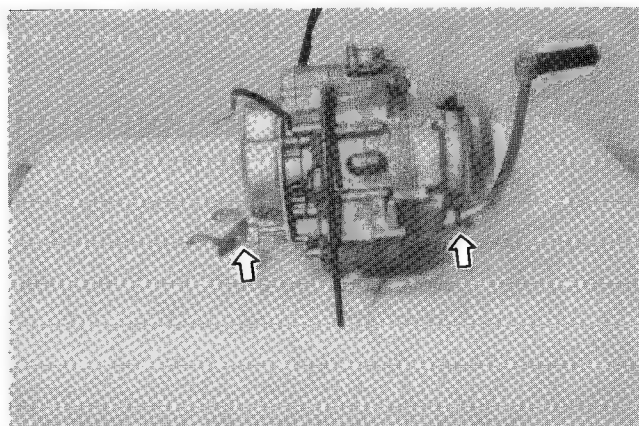
ENGINE DISASSEMBLY

The procedure for engine disassembly is sequentially explained in the following steps.

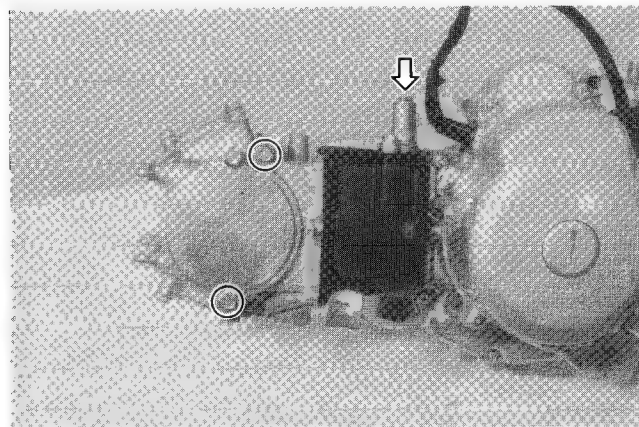
- Remove the footrest.



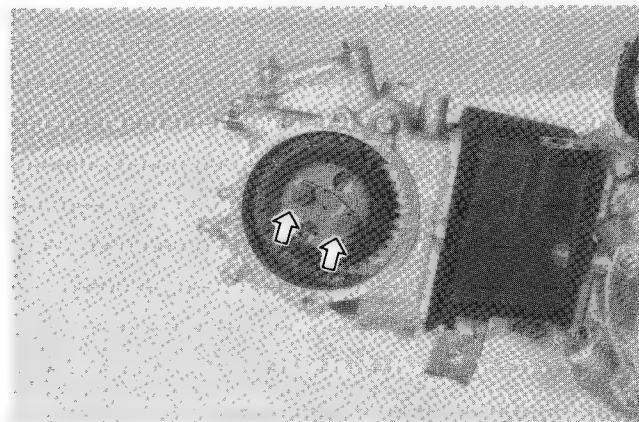
- Remove the gearshift lever and kick starter lever.



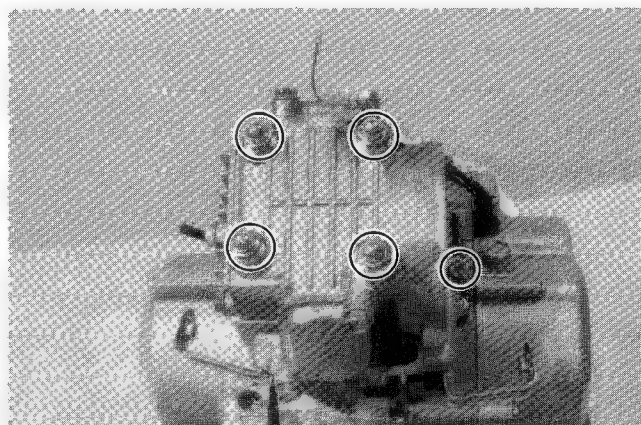
- Remove the cam sprocket cover and chain tensioner.



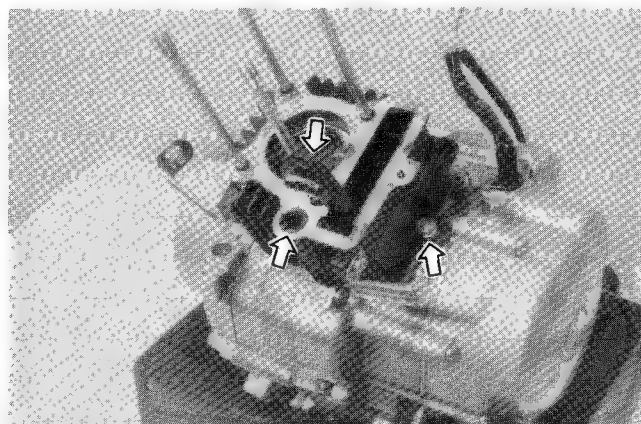
- Remove the cam sprocket bolt and remove the cam sprocket.



- Loosen and remove the cylinder head nuts and bolt.
- Remove the cylinder head.

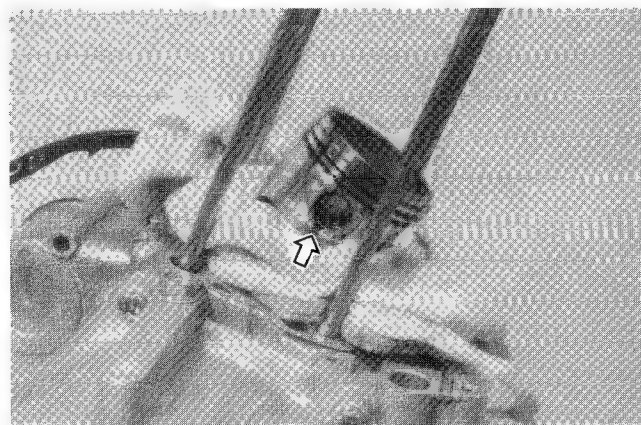


- Remove the chain guide, O-ring and gasket.
- Loosen the cylinder nut and remove the cylinder.

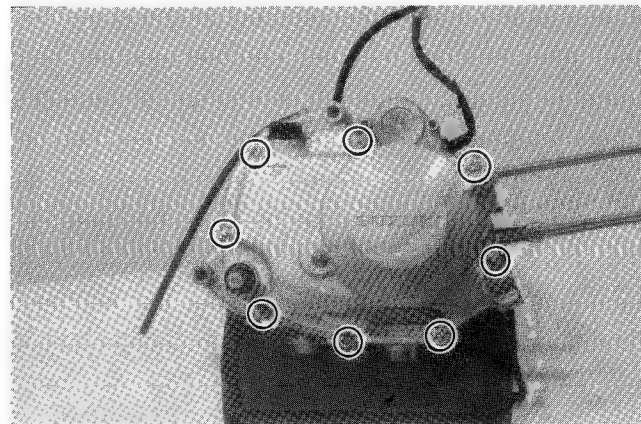


- Place a clean rag over the cylinder base to prevent piston pin circlip from dropping into crankcase and then, remove the piston pin circlip with long-nose pliers.
- Remove the piston pin and piston.

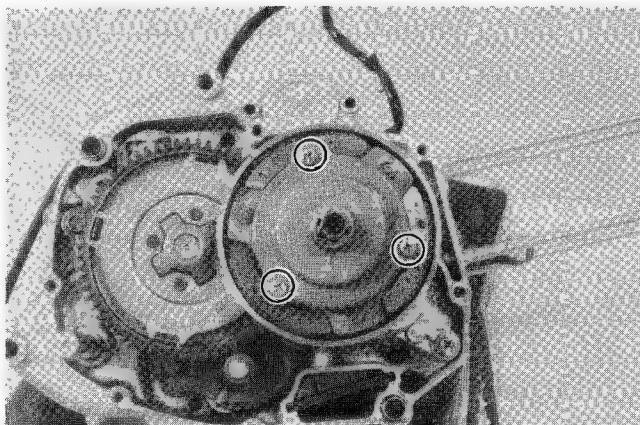
09910-34510	Piston pin puller
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- Remove the clutch cover.

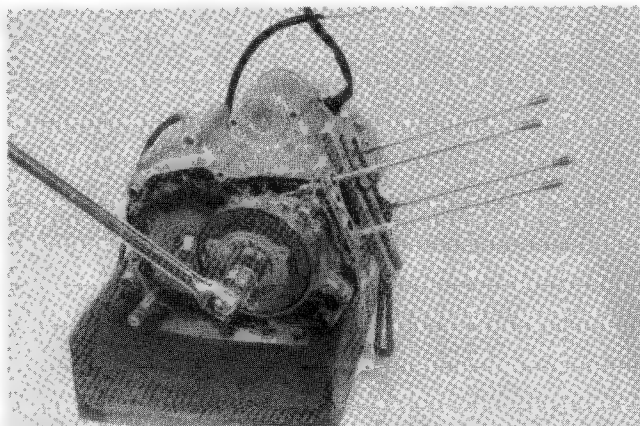


- Remove the engine filter cover.

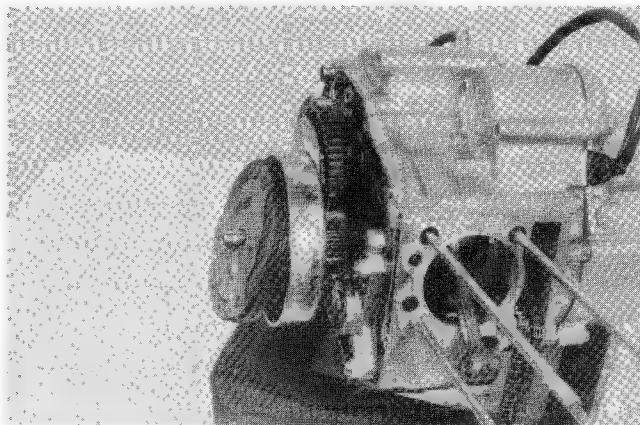


- Flatten the lock washer.
- Loosen the engine filter cover nut by using the special tool.

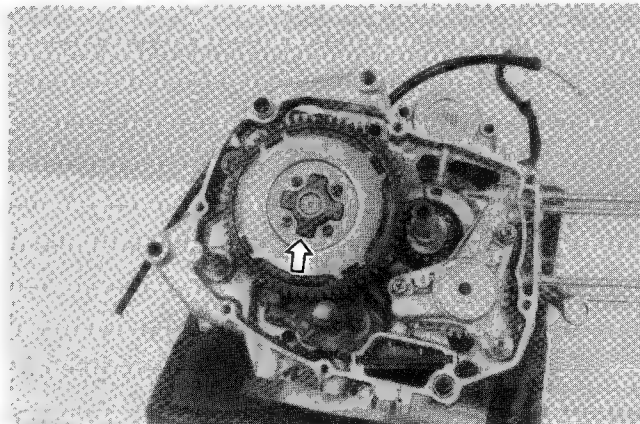
09910-20115	Con-rod stopper
-------------	-----------------



- Remove the engine filter, first clutch ass'y and primary drive gear.



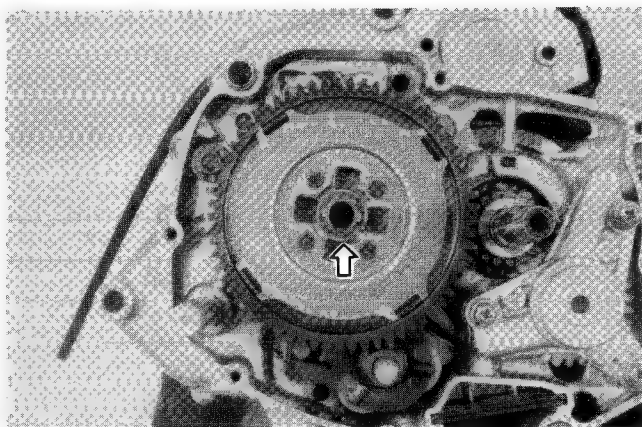
- Remove the clutch push piece.



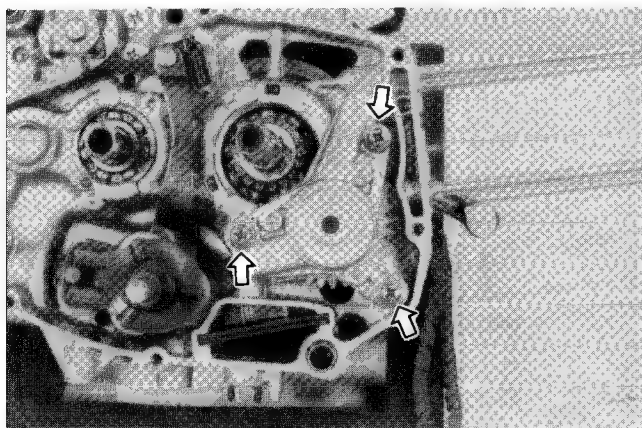
- Remove the clutch sleeve hub circlip by using the special tool.

09900-06107	Snap ring pliers.
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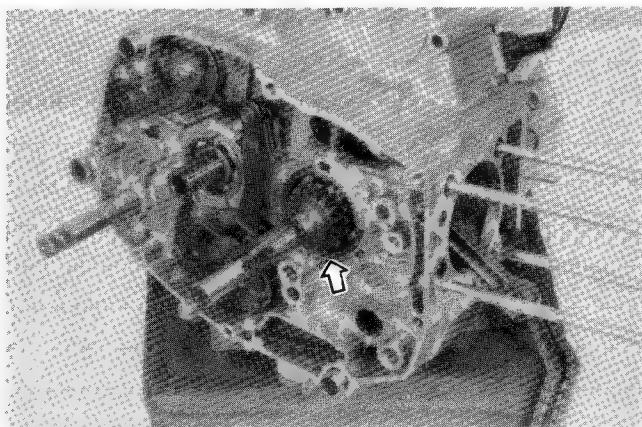
- Remove the primary driven gear assembly.



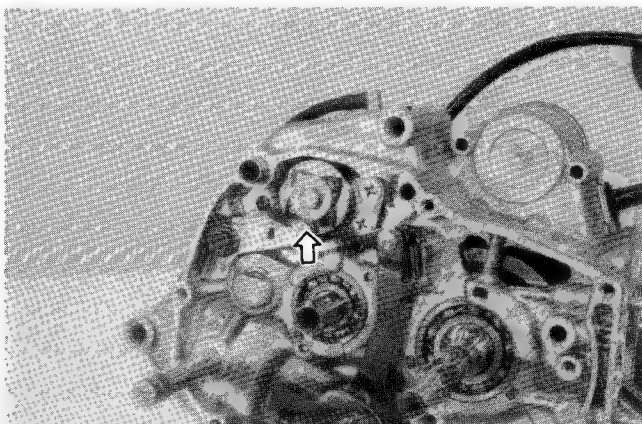
- Remove the oil pump.



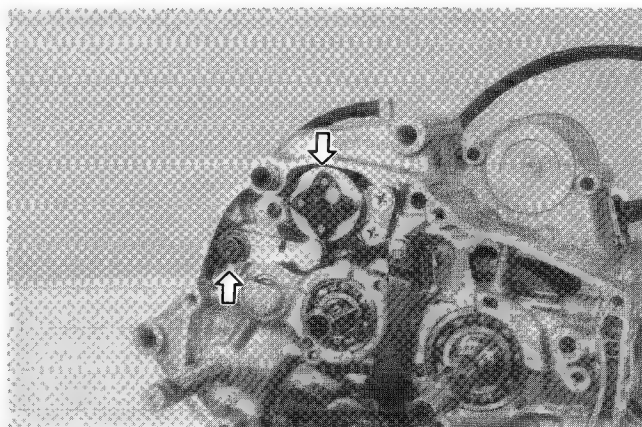
- Remove the oil pump drive gear.



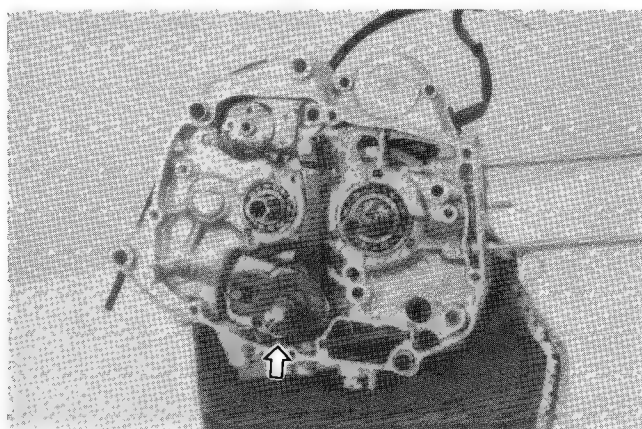
- Remove the shift cam pin bolt.
- Remove the shift cam pin stopper.



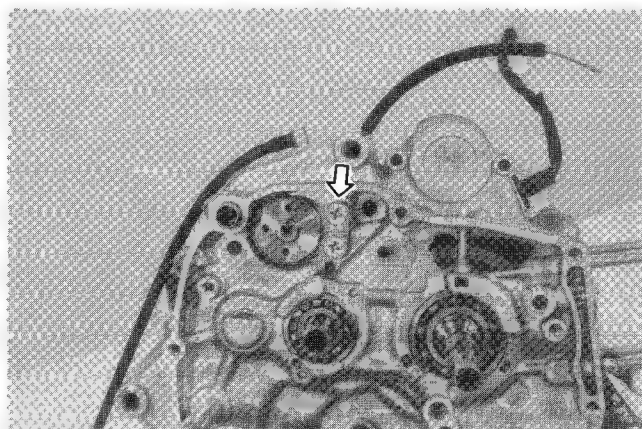
- Remove the shift cam stopper plate, shift cam pin guide and pins.
- Remove the shift cam stopper.



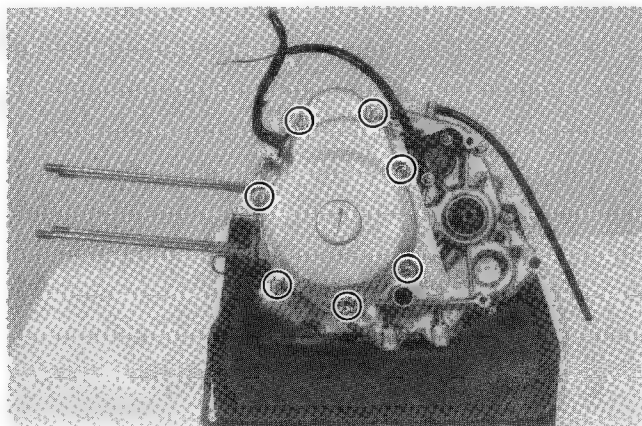
- Remove the gear shift shaft.



- Remove the shift cam stopper.



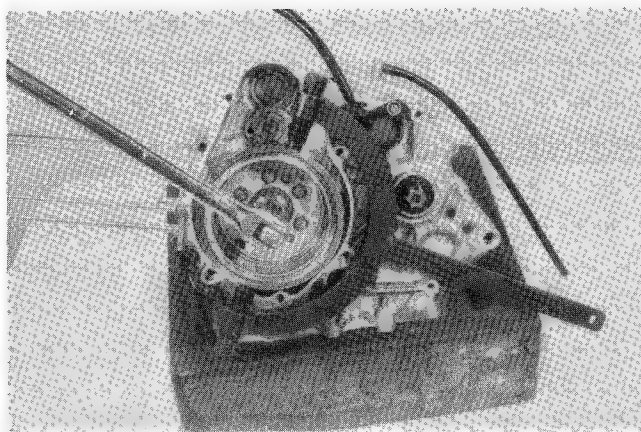
- Remove the magneto cover.



- Loosen the magneto rotor nut by using the special tool.

09930-44912

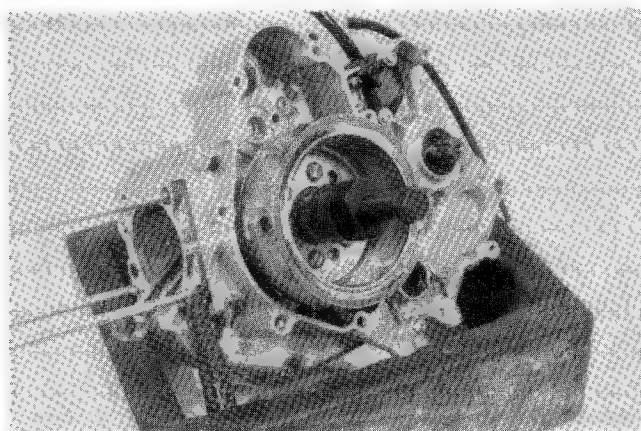
Rotor holder



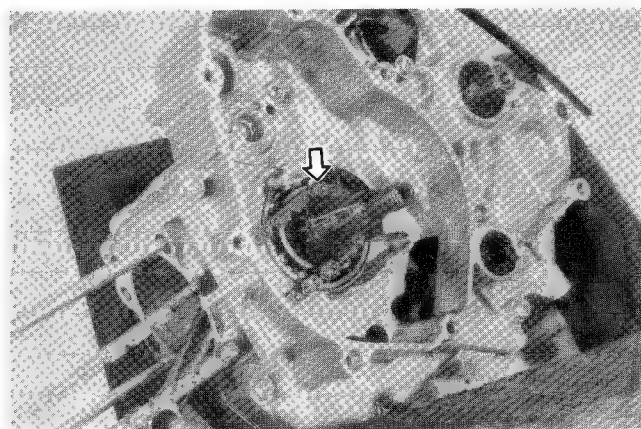
- Remove the rotor by using the special tool.

09930-34951

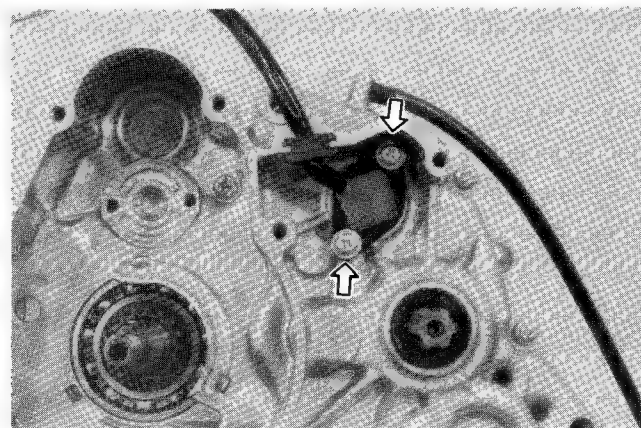
Rotor remover



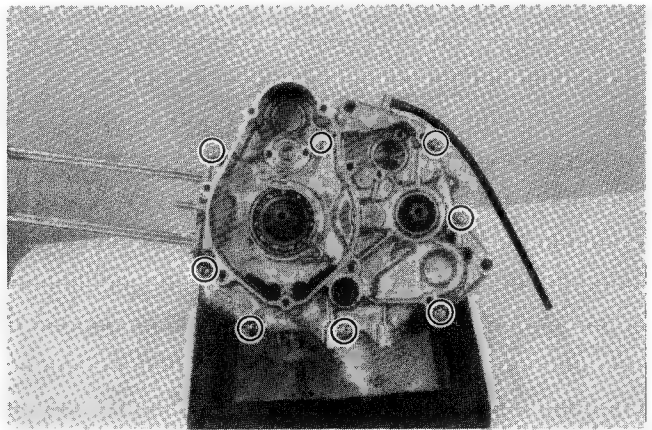
- Remove the cam shaft drive chain.



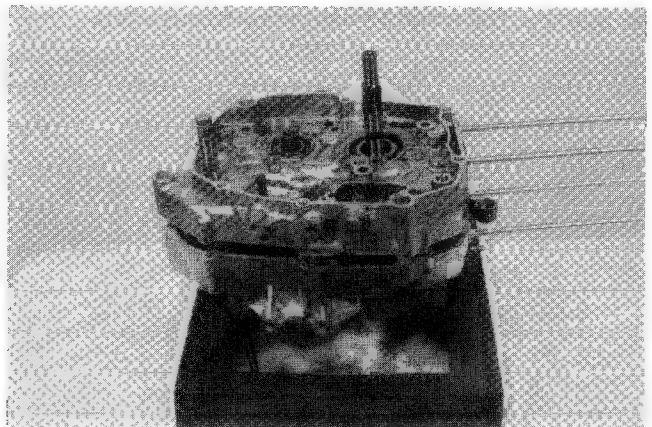
- Remove the neutral switch.



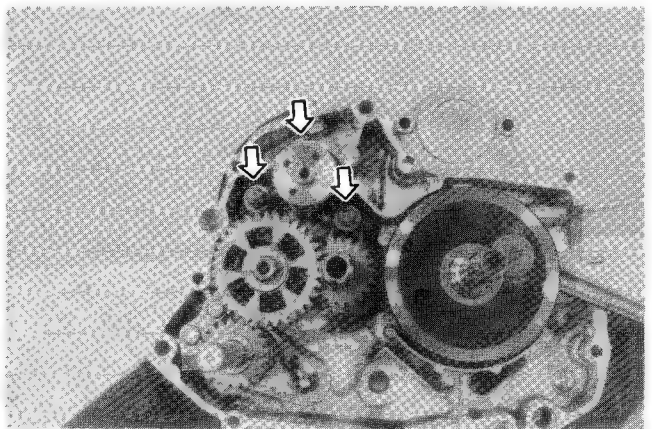
- Loosen the crankcase securing screws.



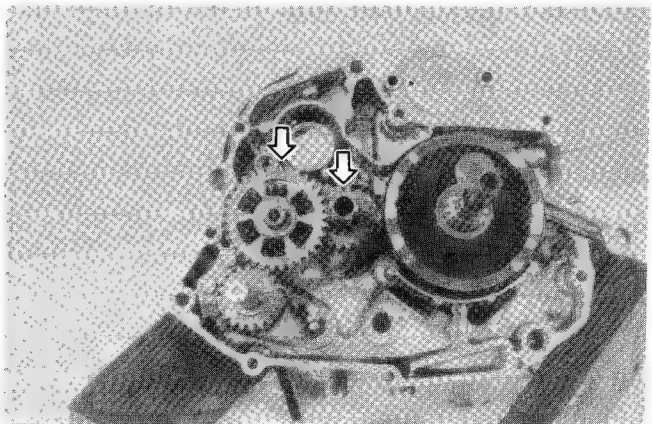
- Separate the right and left crankcase.



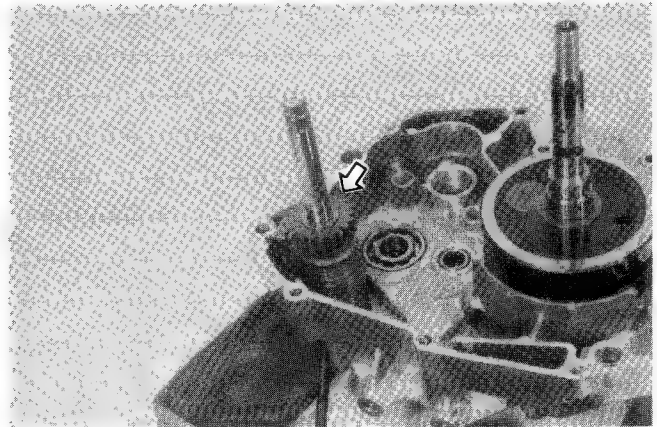
- Remove the gear shift fork shaft, gear shift fork and gear shift cam.



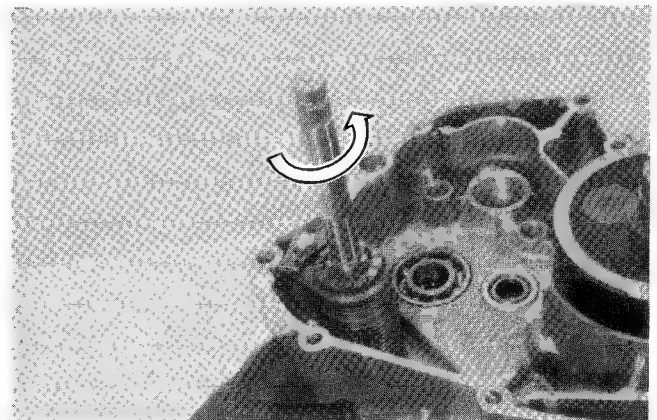
- Remove the countershaft drive gears, driveshaft and driven gears.



- Remove the kick starter drive gear and washer.

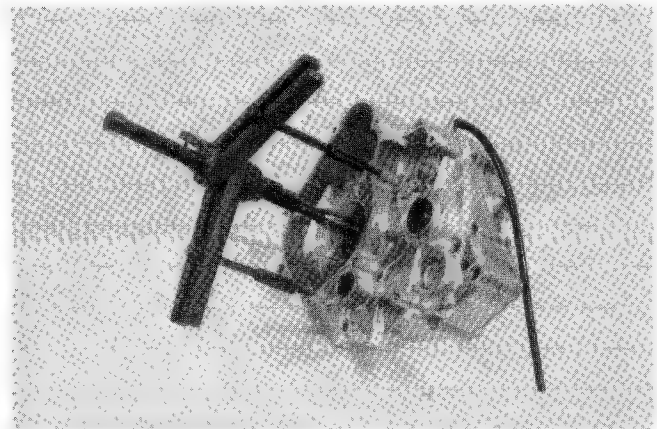


- Remove the kick starter shaft by turning the shaft.



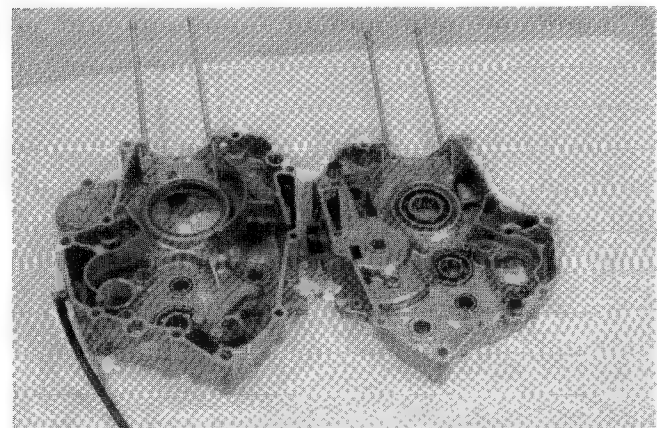
- Remove the crankshaft by using the special tool.

09920-13120	Crankcase separating tool
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- Remove the oil seals and bearings by using the special tools.

09914-79610	Bearing remover
09913-70122	
09921-20210	
09923-73210	
09930-30102	Sliding shaft



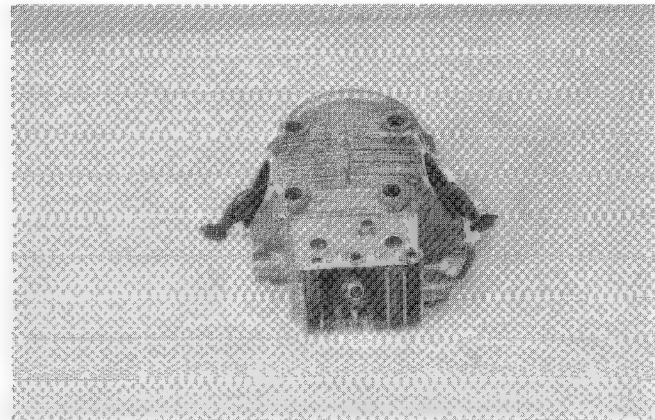
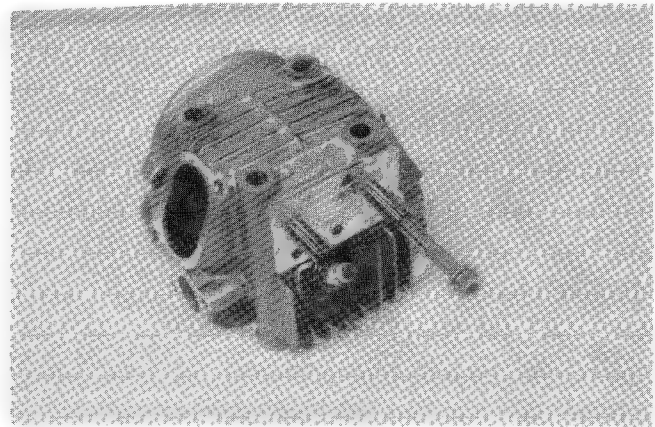
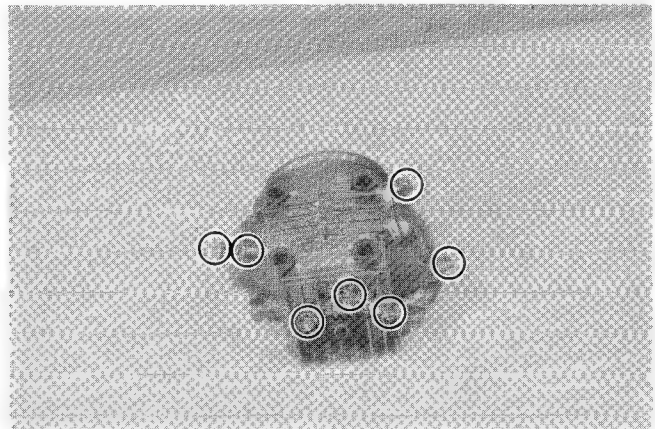
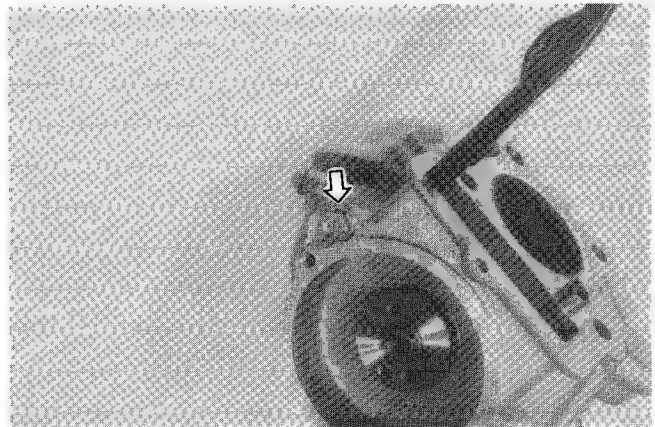
CYLINDER HEAD

- Remove the chain guide.
- Remove the cylinder head right cover and inspection caps.
- Remove the rocker arm shaft by using 8 mm thread bolt.

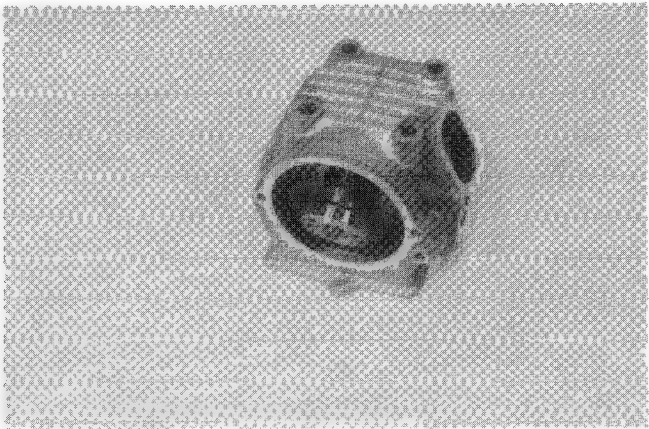
NOTE:

Rocker arm shaft has two types.

- Remove the rocker arms.

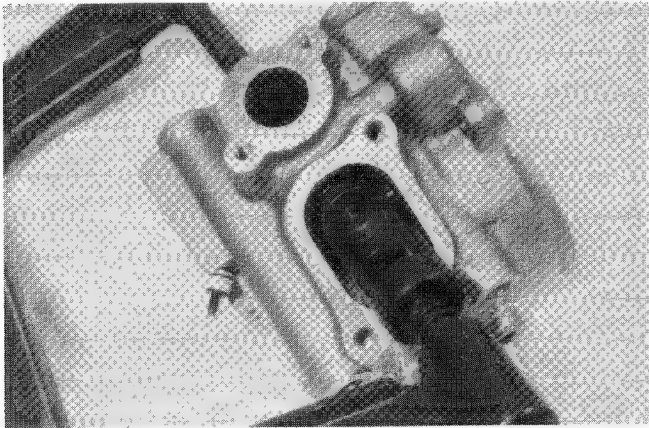


- Remove the cam shaft.



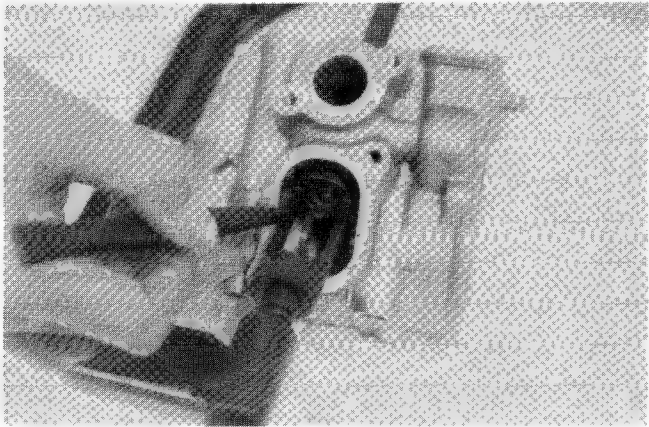
- Compress the valve spring.

09916-14510	Valve lifter
09916-14520	Attachment



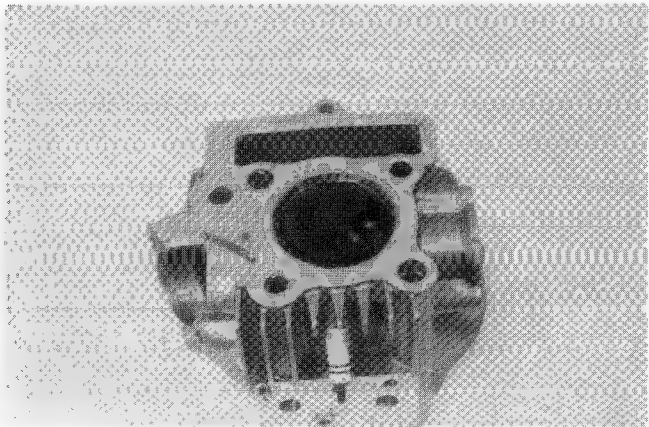
- Take off the two valve cotter halves from the valve stem.

09916-84510	Tweezers
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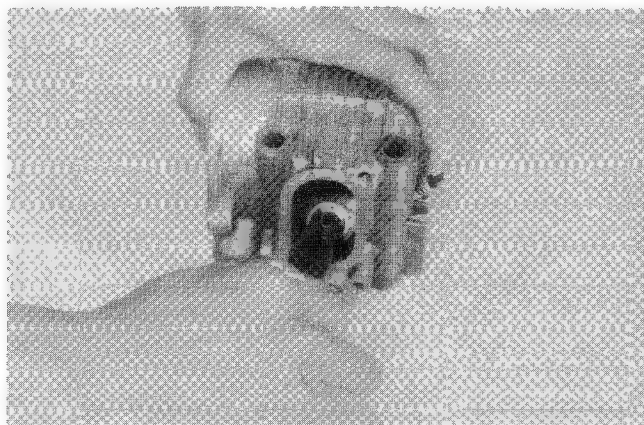


- Take off the valve spring retainer, inner spring and outer spring.

- Pull out the valve from the other side.

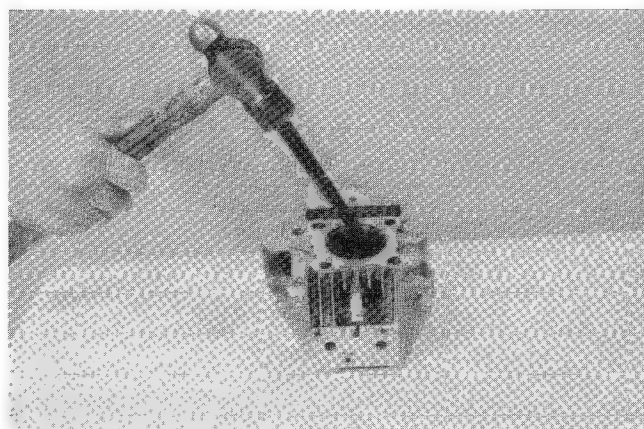


- Remove the oil seal with a long nose pliers.
- Take out the spring seat.



- Remove the valve guide.

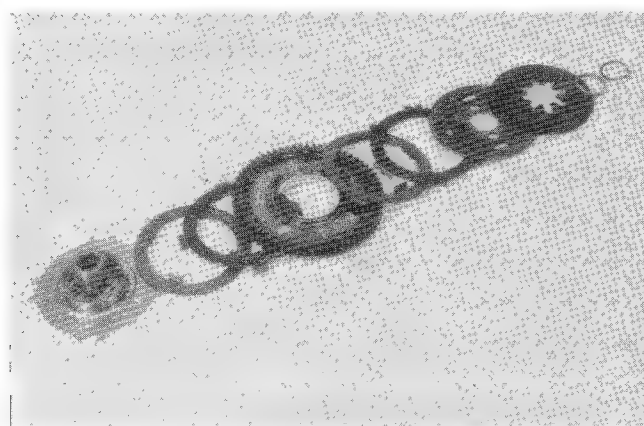
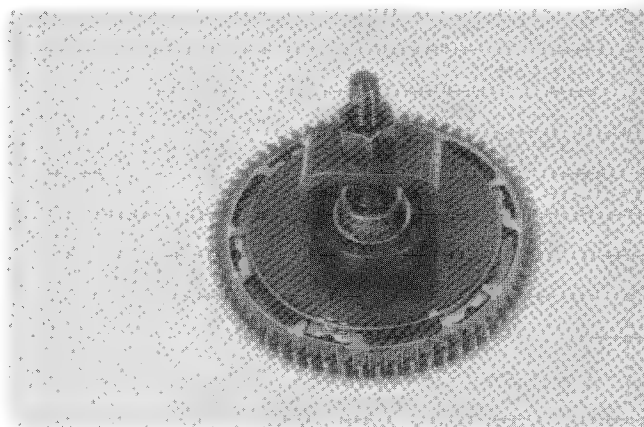
09916-44310	Valve guide remover
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GEAR SHIFTING CLUTCH

- Compress the spring by using the special tool and remove the circlip.

09920-33510	Clutch spring compressor
09900-06107	Snap ring pliers

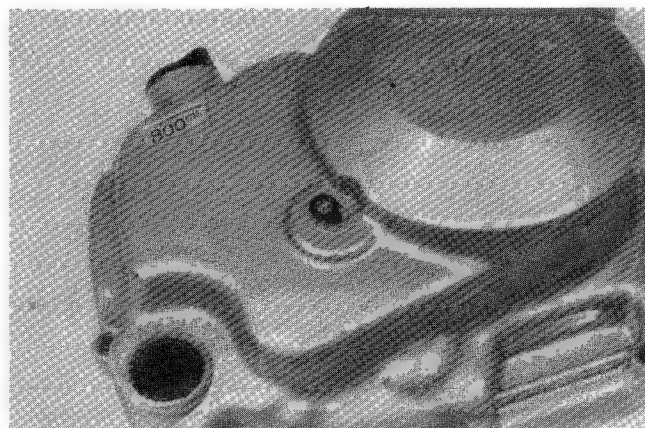
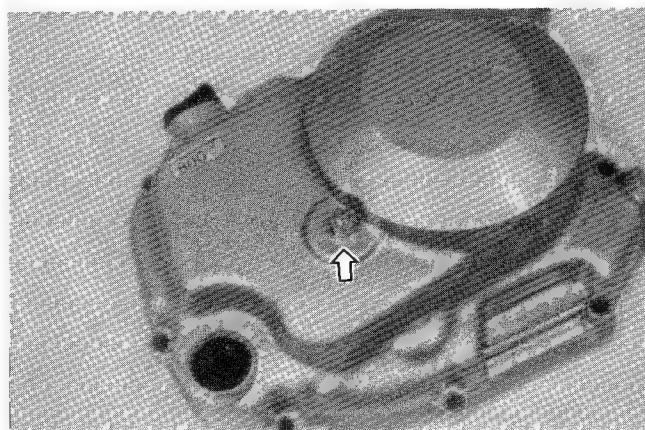
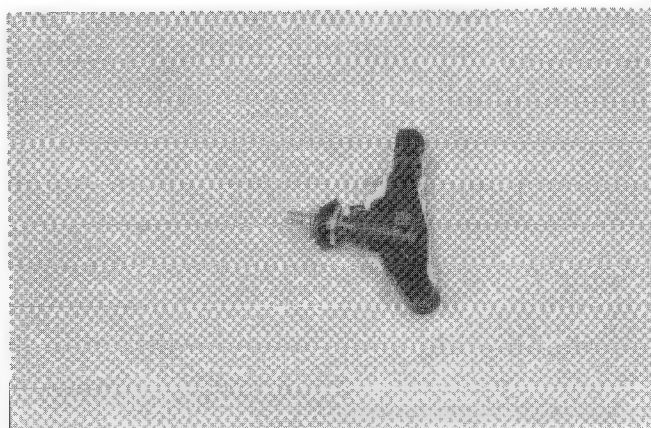


CLUTCH COVER

- Loosen the Lock nut and remove clutch release arm.

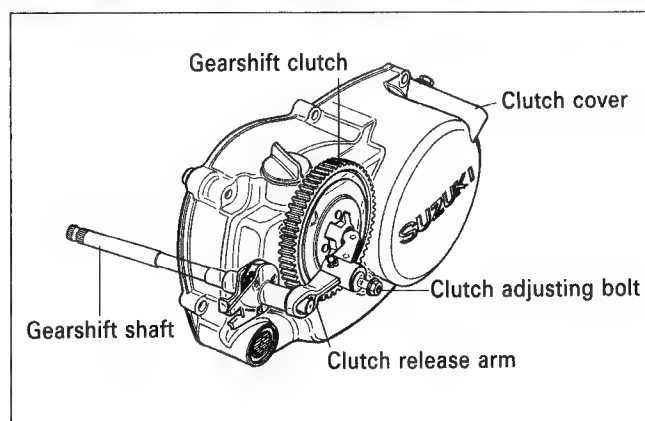
NOTE:

When installing the O-ring, use a new one.



CLUTCH ADJUSTMENT

- Loosen the lock nut.
- First, turn the adjusting bolt clockwise by a one turn and turn it counterclockwise until resistance is felt, then turn it clockwise by a 1/8 turn.
- Tighten the lock nut.

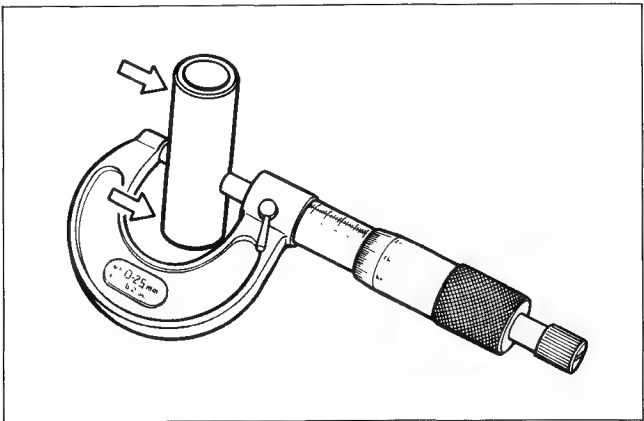


ENGINE COMPONENTS INSPECTION AND SERVICING

ROCKER ARM SHAFT O.D.

Measure diameter of rocker arm shaft.

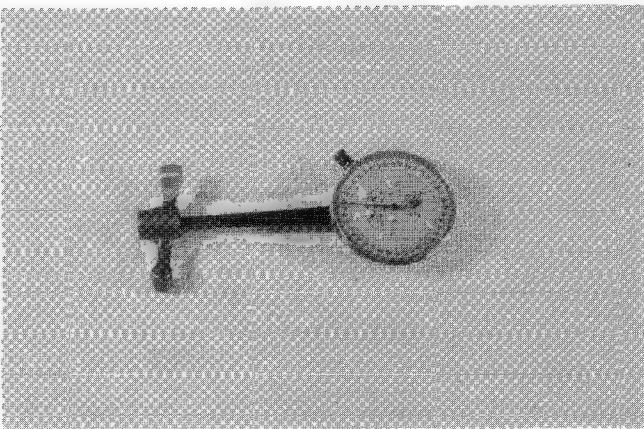
Standard	9.981 – 9.990 mm
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ROCKER ARM I.D

When checking the valve rocker arm, the inside diameter of the valve rocker arm and wear of the camshaft contacting surface should be checked.

Standard	10.003 – 10.018 mm
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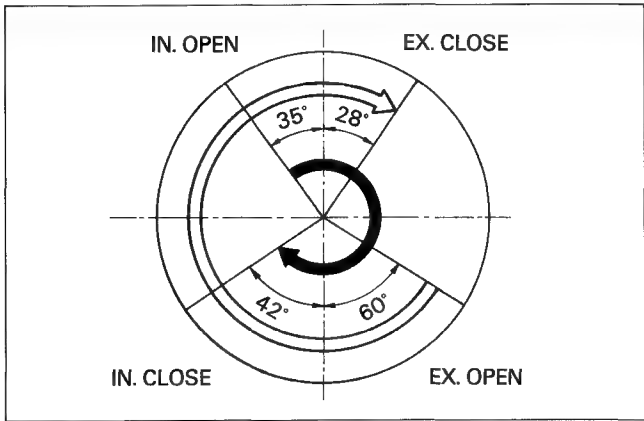


CAMSHAFT

The camshaft should be checked for runout and also for wear of cams and journals if the engine has been noted to give abnormal noise or vibration or to lack output power. Any of these malconditions could be caused by camshaft worn down or distorted to the service limit.

CAMSHAFT CAM WEAR

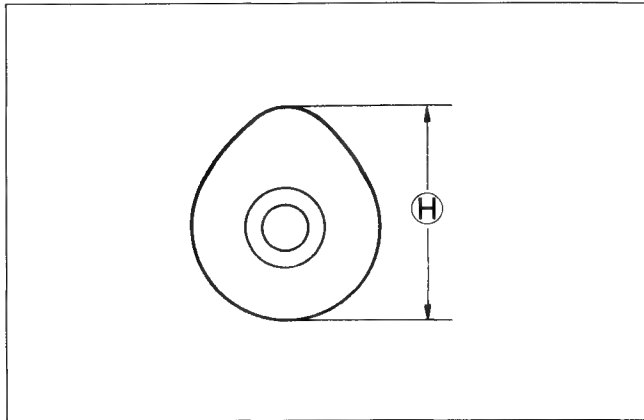
Worn-down cams are often the cause of mistimed valve operation resulting in reduced output power. The limit of cam wear is specified for both intake and exhaust cams in terms of cam height \textcircled{H} , which is to be measured with a micrometer. Replace camshafts if found it worn down to the limit.



Micrometer (25 – 50 mm)	09900 – 20202
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Cam height

Height \textcircled{H}	Service limit
Intake cam	27.110 mm
Exhaust cam	26.970 mm

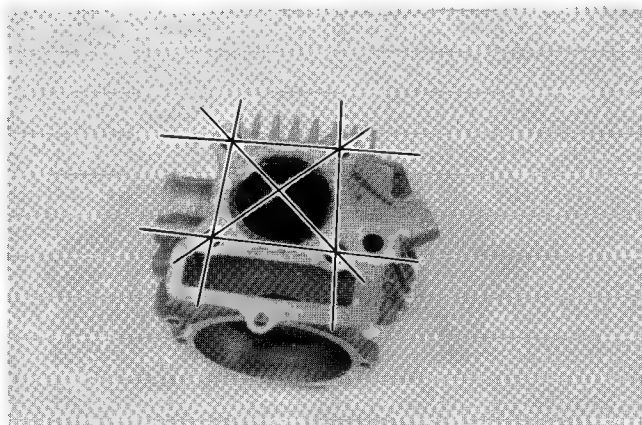


CYLINDER HEAD DISTORTION

Decarbon combustion chamber.

Check the gasketed surface of the cylinder head for distortion with a straightedge and thickness gauge, taking a clearance reading at several places as indicated. If the largest reading at any position of the straightedge exceeds the limit, replace the cylinder head.

Service limit	0.05 mm
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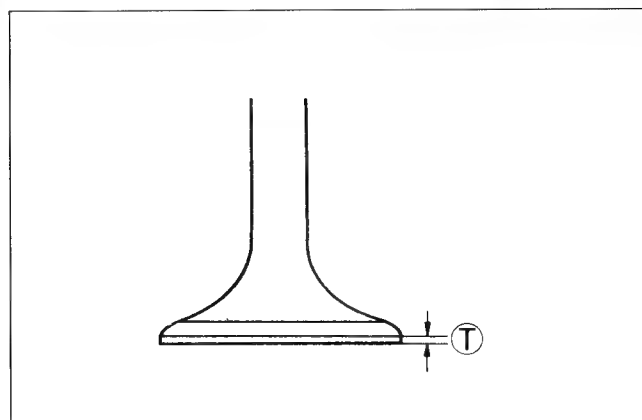
VALVE HEAD THICKNESS

Measure the thickness \textcircled{T} and, if the thickness is found to have been reduced to the limit, replace the valve.

NOTE:

Visually inspect each valve for wear of its seating face. Replace any valve with an abnormally worn face.

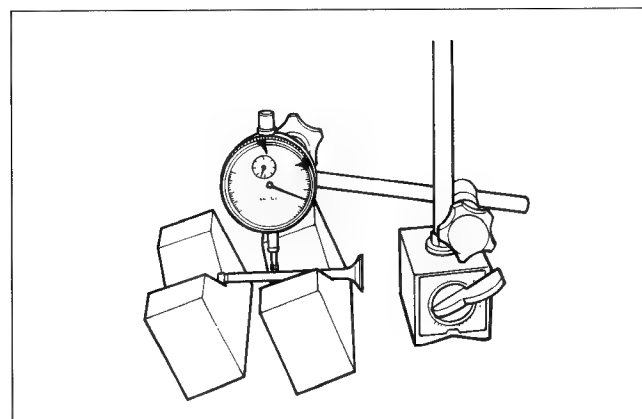
Service limit	0.5 mm
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VALVE STEM RUNOUT

Support the valve with "V" blocks, as shown, and check its runout with a dial gauge. The valve must be replaced if the runout exceeds the limit.

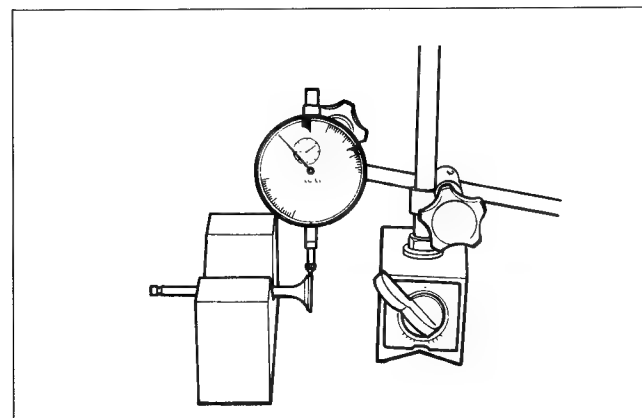
Service limit	0.05 mm
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VALVE HEAD RADIAL RUNOUT

Place the dial gauge at right angles to the valve head, and measure the valve head radial runout. If it measures more than limit, replace the valve.

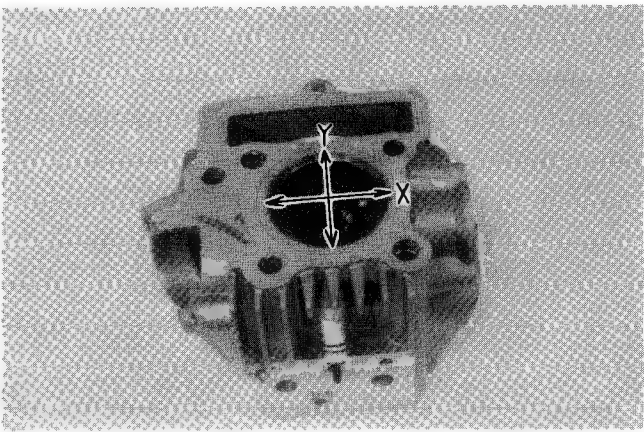
Service limit	0.03 mm
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**VALVE GUIDE-VALVE STEM
CLEARANCE**

Measure the clearance in two directions, "X" and "Y", perpendicular to each other, by rigging up the dial gauge as shown. If the clearance measured exceeds the limit specified below, then determine whether the valve or the guide should be replaced to reduce the clearance to within the standard range:

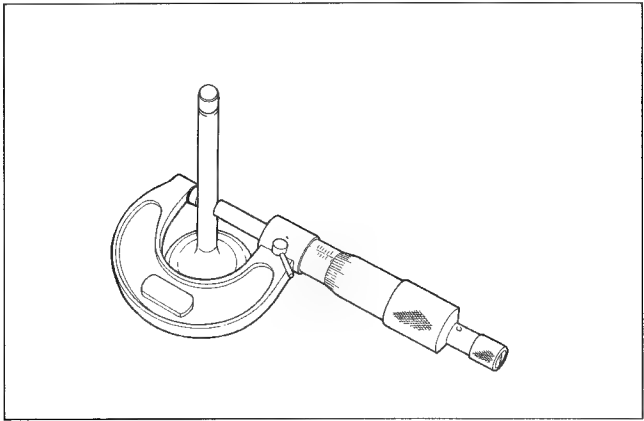
	Service	Service limit
IN.	0.020 – 0.047 mm	0.35 mm
EX.	0.030 – 0.057 mm	0.35 mm



VALVE STEM WEAR

If the valve stem is worn down to the limit, when measured with a micrometer, and the clearance is found to be in excess of the limit indicated above, replace the valve, if the stem is within the limit, then replace the guide. After replacing valve or guide, be sure to recheck the clearance.

Micrometer (0 – 25 mm)	09900-20205
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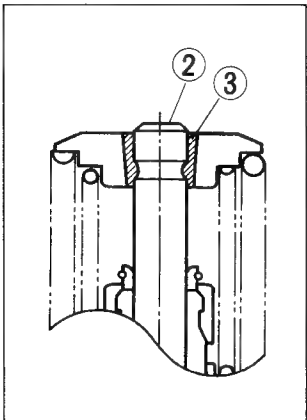
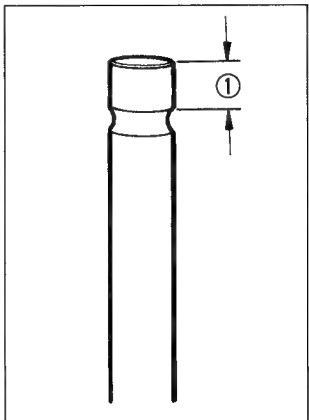


Valve stem O. D.

	Standard
IN.	4.965 – 4.980 mm
EX.	4.955 – 4.970 mm

VALVE STEM END CONDITION

Inspect the valve stem end face for pitting and wear. If pitting or wear of the stem end face are present, the valve stem end may be resurfaced, providing that the length ① will not be reduced to less than 2.6 mm. If this length becomes less than 2.6 mm the valve must be replaced. After installing a valve whose stem end has been ground off as above, check to ensure that the face ② of the valve stem end is above the cotters ③.



VALVE GUIDE INSTALLATION

- Re-finish the valve guide holes in cylinder head with a 10.8 mm reamer ① and handle.

10.8 mm reamer	09916-34580
Handle	09916-34541

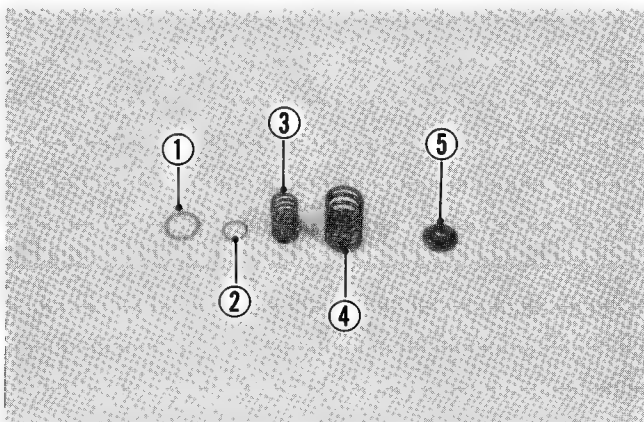
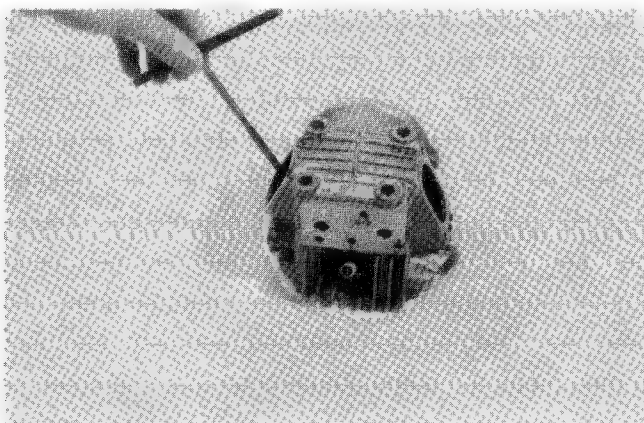
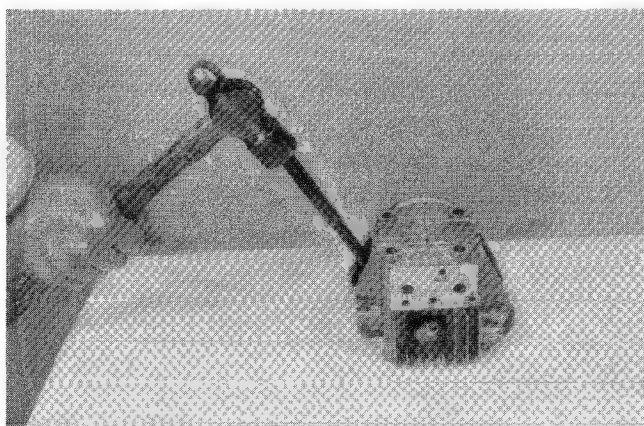
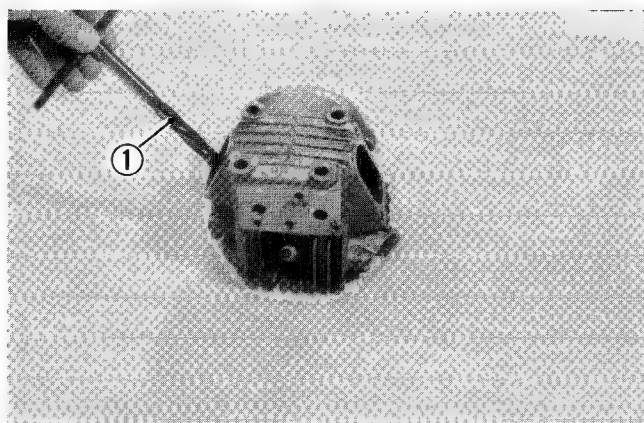
- Fit a ring to each valve guide. Be sure to use new rings and valve guides. Rings and valve guides removed in disassembly must be discarded.
- Lubricate each valve guide and drive the guide into the guide hole using the valve guide installer handle and valve guide installer attachment.

Valve guide installer and remover	09916-44310
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- After fitting all valve guides, re-finish their guiding bores with a 5.0 mm reamer. Be sure to clean and oil the guides after reaming.

5.0 mm reamer	09916-34570
Handle	09916-34541

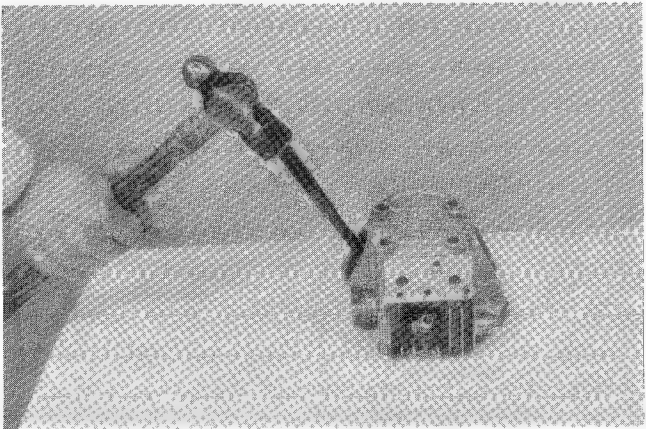
- Install the valve spring outer seat ①, valve spring inner seat ②, inner spring ③, outer spring ④ and valve spring retainer ⑤.



- Oil each seal, and drive them into position with the valve stem seal installer.

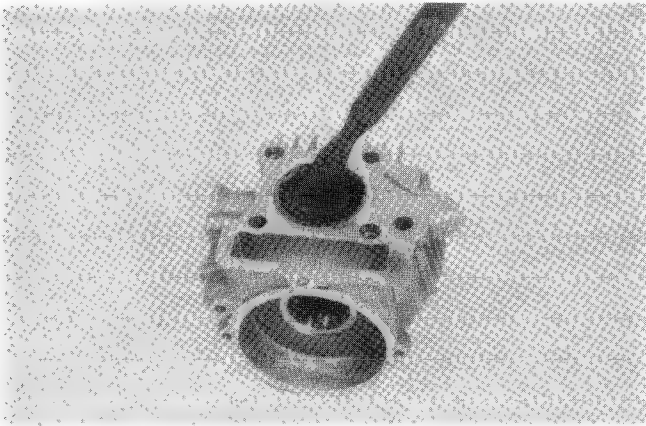
CAUTION:
Do not reuse the oil seals.

Valve guide installer and stem seal installer	09916-44310
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VALVE SEAT WIDTH

- Coat the valve seat with prussian blue uniformly. Fit the valve and tap the coated seat with the valve face in a rotating manner, in order to obtain a clear impression of the seating contact. In this operation, use the valve lapper to hold the valve head.



- The ring-like dye impression left on the valve face must be continuous-without any break. In addition, the width of the dye ring, which is the visualized seat “width”, must be within the specification.

Valve seat width

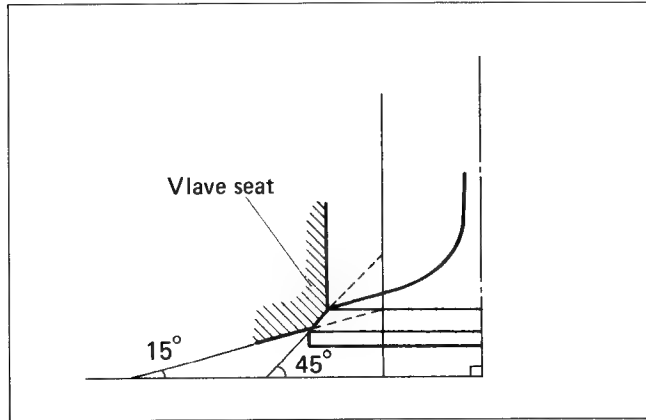
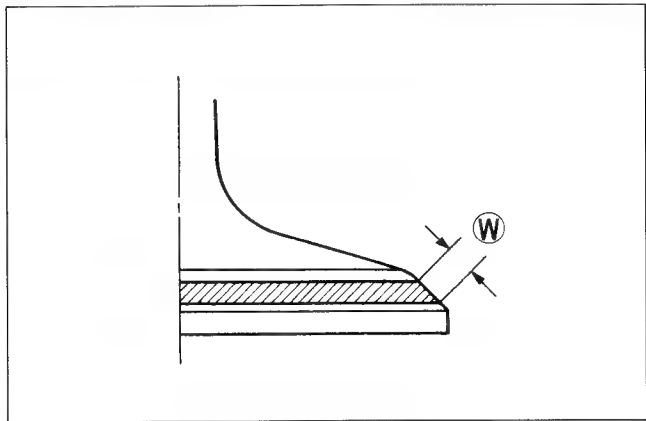
STD. (W)	1.0 mm
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If either requirement is not met, correct the seat by servicing it as follows.

VALVE SEAT SERVICING

The valve seats for both intake and exhaust valves are angled to present two bevels, 15° and 45°.

	IN		EX	
	15°	45°	15°	45°
Cutter head	N-120	N-122	N-134	N-131
Solid pilot	N-100 -5.0	N-100 -5.0	N-100 -5.0	N-100 -5.0



09916-20620	Cutter head 45°
09916-29010	Cutter head 15°
09916-20410	Cutter head 15°
09916-24470	Cutter head 45°
09916-24310	Solid pilot
09916-24440	Adaptor
09916-24980	T-handle wrench

NOTE:

The valve seat contact area must be inspected after each cut.

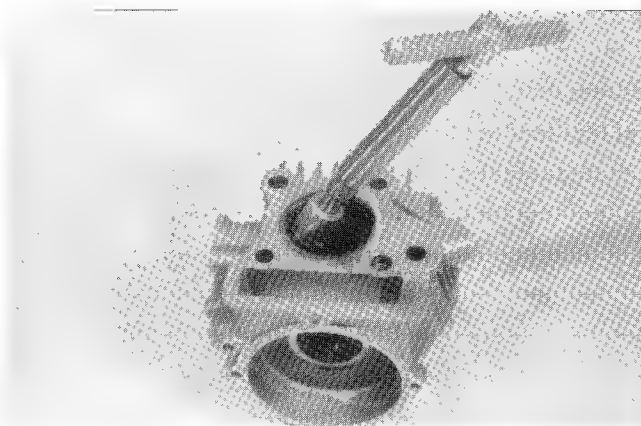
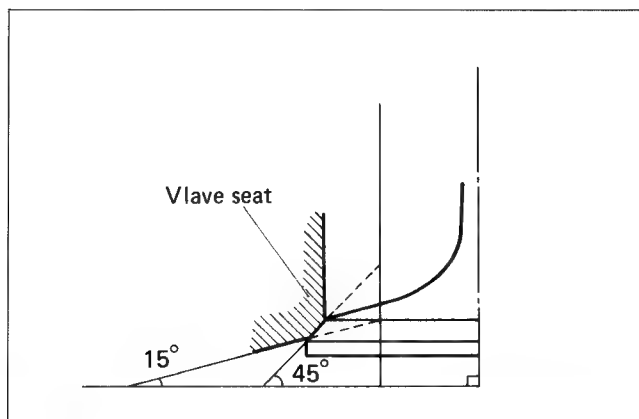
1. Insert with a slight rotation, the solid pilot that gives a snug fit. The shoulder on the pilot should be about 10 mm from the valve guide.
2. Using the 45° cutter, descale and cleanup the seat with one or two turns.
3. Inspect the seat by the previous seat width measurement procedure. If the seat is pitted or burned, additional seat conditioning with the 45° cutter is required.

CAUTION:

Cut the minimum amount necessary from the seat to prevent the possibility of the valve stem becoming too close to the rocker arm for correct valve contact angle.

If the contact area is too low or too narrow, use the 45° cutter to raise and widen the contact area. If the contact area is too high or too wide, use the 15° cutter to lower and narrow the contact area.

4. After the desired seat position and width is achieved, use the 45° cutter very lightly to clean up any burrs caused by the previous cutting operations. DO NOT use lapping compound after the final cut is made. The finished valve seat should have a velvety smooth finish and not a highly polished or shiny finish. This will provide a soft surface for the final seating of the valve which will occur during the first few seconds of engine operation.



5. Clean and assemble the head and valve components. Fill the intake and exhaust ports with gasoline to check for leaks. If any leaks occur, inspect the valve seat and face for burrs or other things that could prevent the valve from sealing.

WARNING:

Always use extreme caution when handling gasoline.

NOTE:

Be sure to adjust the valve clearance after reassembling the engine.

VALVE SPRINGS

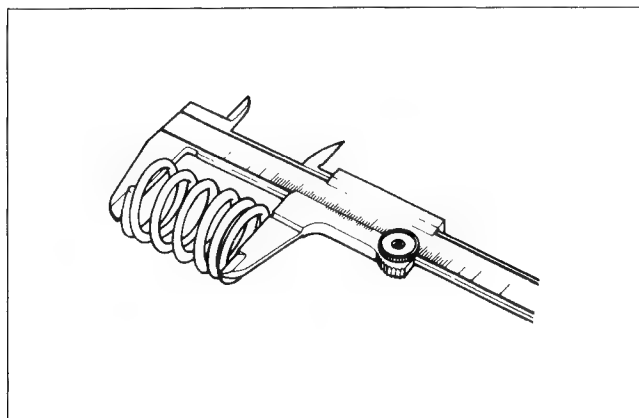
Check the springs for stength by measuring their free lengths and also the force required to compress them. If the limit indicated below is exceeded by the free length reading or if the measured force does not fall within the range specified, replace with a SUZUKI spring as a set.

Valve spring free length

Spring	Service limit
INNER	29.6 mm
OUTER	34.5 mm

Valve spring tension

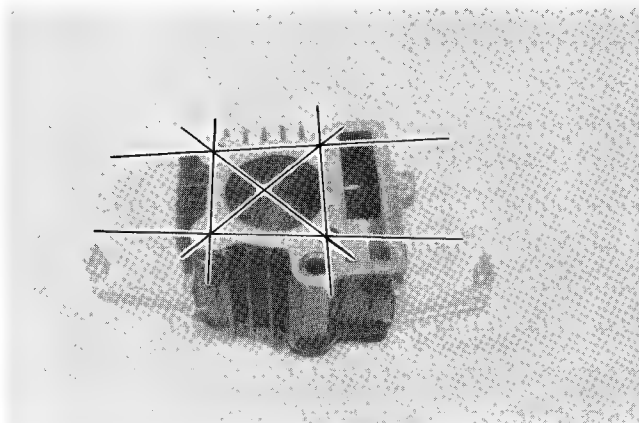
Spring	Standard
INNER	5.58 – 6.42 kg/24 mm
OUTER	10.69 – 12.31 kg/27 mm



CYLINDER DISTORTION

Check the gasketed surface of the cylinder for distortion with a straightedge and thickness gauge, taking a clearance reading at several places as indicated. If the largest reading at any position of the straightedge exceeds the limit, replace the cylinder.

Service limit	0.05 mm
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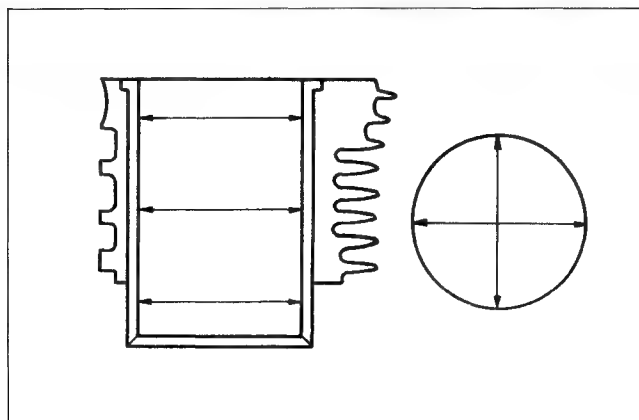


CYLINDER BORE

Measure the cylinder bore diameter at six places. If any one of the measurements exceeds the limit, overhaul the cylinder and replace the piston with an oversize, or replace the cylinder.

Cylinder gauge set	09900-20508
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Service limit	51.100 mm
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PISTON DIAMETER

Using a micrometer, measure the piston outside diameter at the place 11 mm from the skirt end as shown in Fig. If the measurement is less than the limit, replace the piston.

Micrometer (50 – 75 mm)	09900-20203
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Service limit	50.880 mm
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Piston oversize	0.5, 1.0 mm
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NOTE:

Using a soft-metal scraper, decarbon the crown of the piston. Clean the ring grooves similarly.

PISTON-CYLINDER CLEARANCE

As a result of the above measurement, if the piston to cylinder clearance exceeds the limit shown in the table below, overhaul the cylinder and use an over-size piston, or replace both cylinder and piston.

Service limit	0.120 mm
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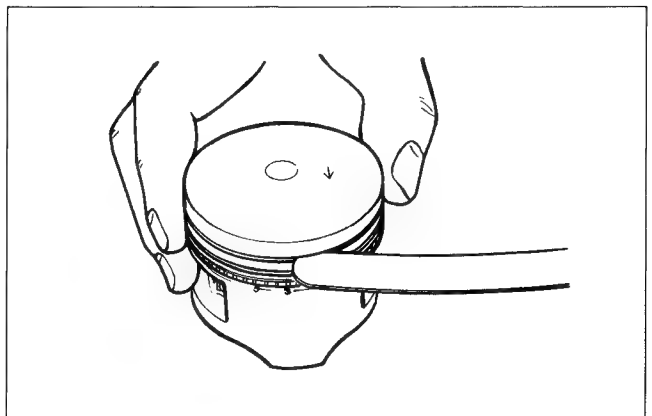
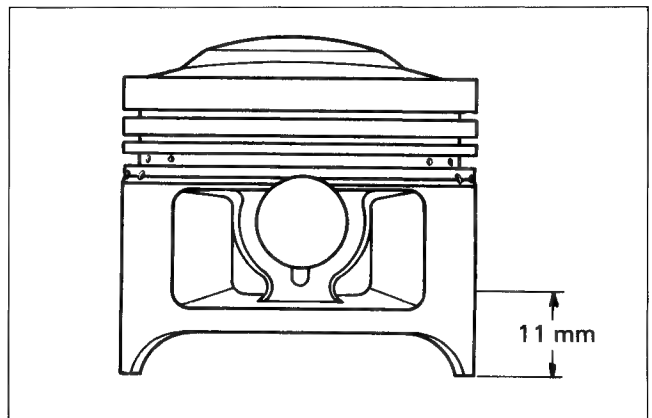
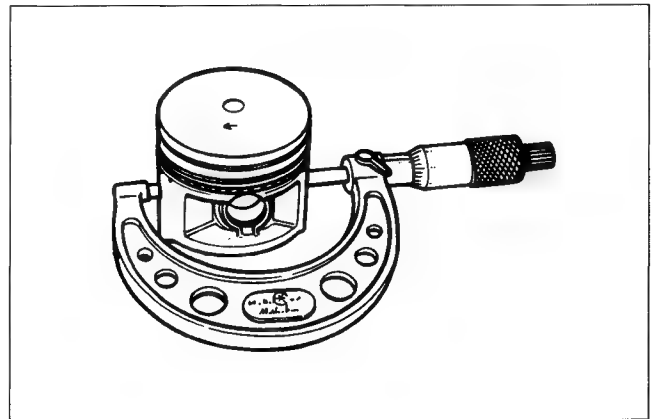
PISTON RING-GROOVE CLEARANCE

Using a thickness gauge, measure the side clearance of the 1st and 2nd rings. If any of the clearances exceeds the limit, replace both piston and piston rings.

Thickness gauge	09900-20803
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Piston ring-groove clearance

Piston ring	Service limit
1st	0.180 mm
2nd	0.150 mm



Piston ring groove width

Piston ring	Standard
1st	1.22 – 1.24 mm
2nd	1.21 – 1.23 mm
Oil	2.01 – 2.03 mm

PISTON RING FREE END GAP AND PISTON RING END GAP

Before installing piston rings, measure the free end gap of each ring using vernier calipers.

Next, fit the ring in the cylinder, and measure each ring end gap using a thickness gauge.

If any ring has an excess end gap, replace the ring.

Piston ring free end gap

Piston ring		Service limit
1st	R	3.4 mm
2nd	R	5.4 mm

Vernier calipers (150 mm)	09900-20101
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Piston ring end gap

Piston ring	Service limit
1st and 2nd	0.70 mm

Thickness gauge	09900-20803
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OVERSIZE RINGS

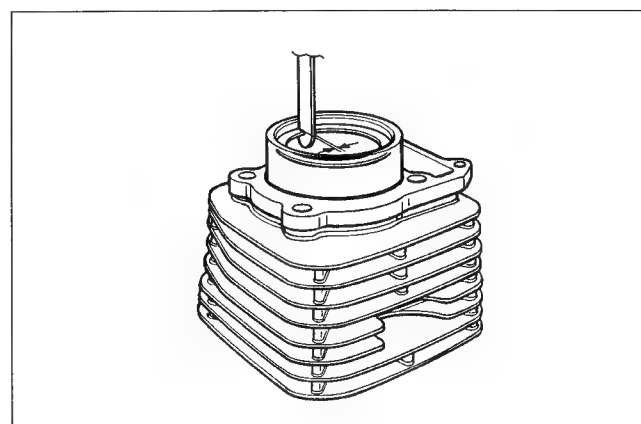
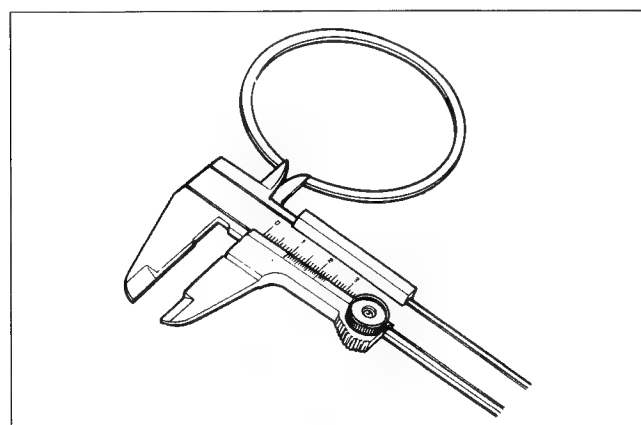
- **Oversize piston rings**

The following two types of oversize piston rings are used. They bear the following identification numbers.

Piston ring	1st	2nd
0.5 mm	50	50
1.0 mm	100	100

Piston ring thickness

Piston ring	Standard
1st	1.175 – 1.190 mm
2nd	1.175 – 1.190 mm



- **Oversize oil rings**

The following two types of oversize oil rings are used. They bear the following identification marks.

0.5 mm	Painted red
1.0 mm	Painted yellow

- **Oversize side rail**

Just measure outside diameter to identify the side rail as there is no mark or numbers on it.

PISTON PIN-PIN BORE

Using a caliper guage, measure the piston pin bore inside diameter, and using a micrometer measure the piston pin outside diameter. If the difference between these two measurements is more than the limits, replace both piston and piston pin.

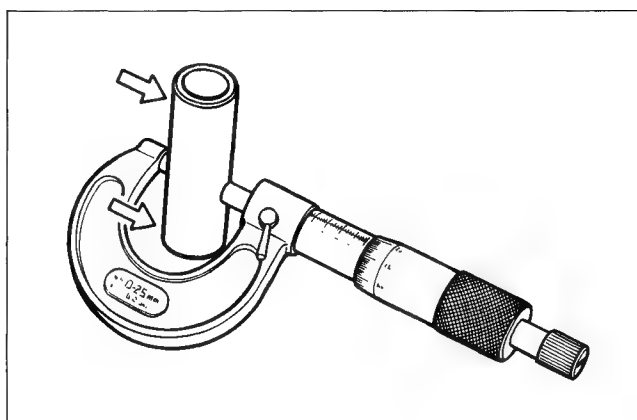
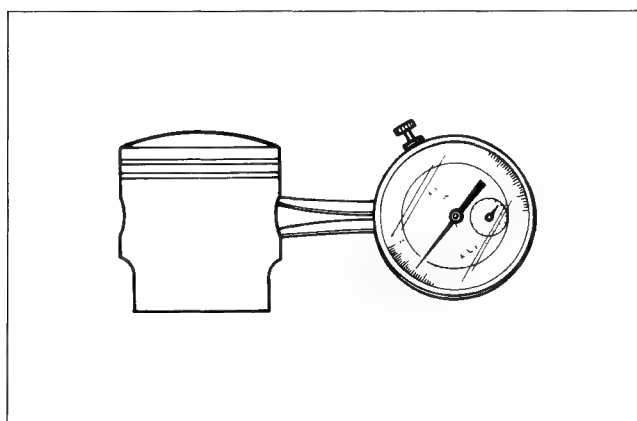
Micrometer (0 – 25 mm)	09900-20205
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Piston pin bore

Service limit	14.035 mm
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Piston pin O.D.

Service limit	13.976 mm
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CRANK BEARINGS

Wash the bearing with cleaning solvent and lubricate the bearing with motor oil before inspecting. Turn the inner race and check to see that the inner race turns smoothly. If it does not turn lightly, quietly and smoothly, or if noise is heard, the bearing is defective and must be replaced with a new one.

CRANKSHAFT

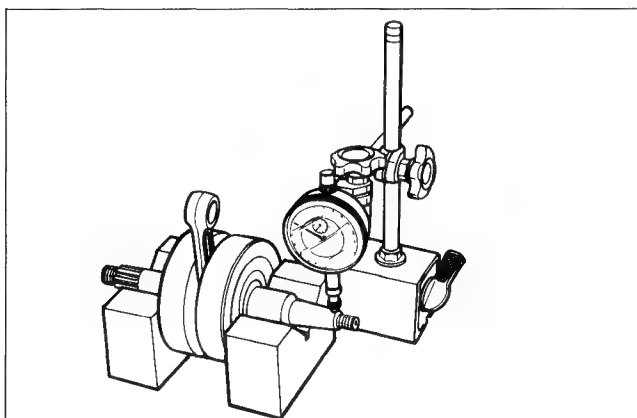
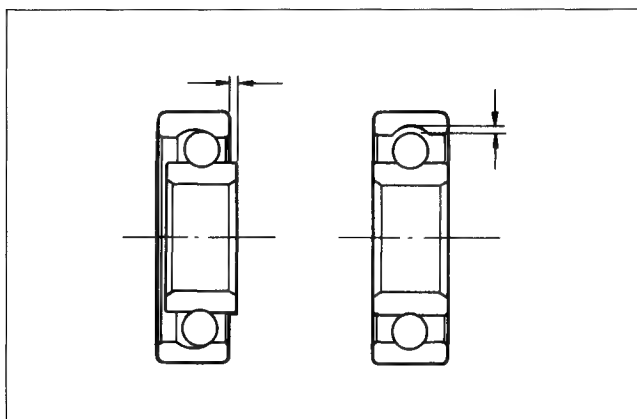
CRANKSHAFT RUNOUT

Support the crankshaft by "V" blocks, with the dial gauge rigged to read the runout as shown.

Service Limit	0.05 mm
---------------	---------

Excessive crankshaft runout is often responsible for abnormal engine vibration. Such vibration shortens engine life.

09900-21303	V-block (75 mm)
09900-20701	Magnetic stand
09900-20606	Dial gauge (1/100 mm)



CONDITION OF BIG END BEARING

Turn the crankshaft with the connecting rod to feel the smoothness of rotary motion in the big end. Move the rod up and down while holding the crankshaft rigidly to be sure that there is no rattle in the big end.

- Install the shim removed from the old crankshaft on the new shaft.

CAUTION:

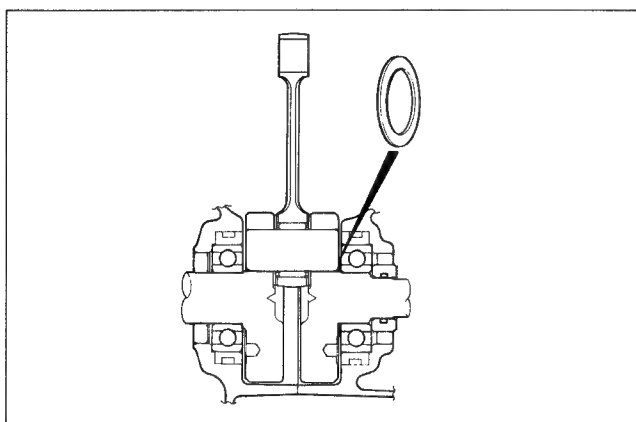
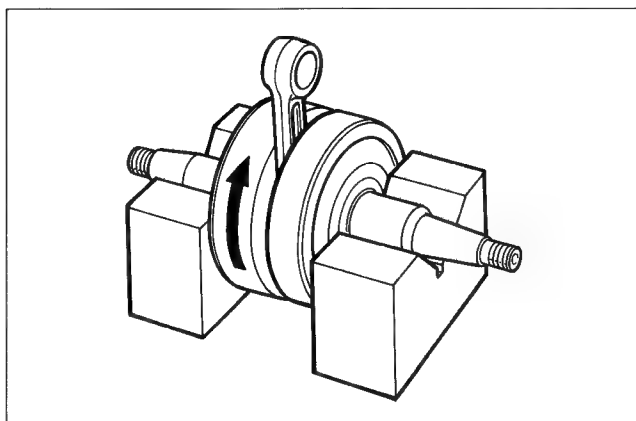
Rotate the crankshaft, if the rotation is not smoothly, the shim must be changed to the thinner one.

NOTE:

When rotating the crankshaft, remove the oil seal RH and LH.

List of shims

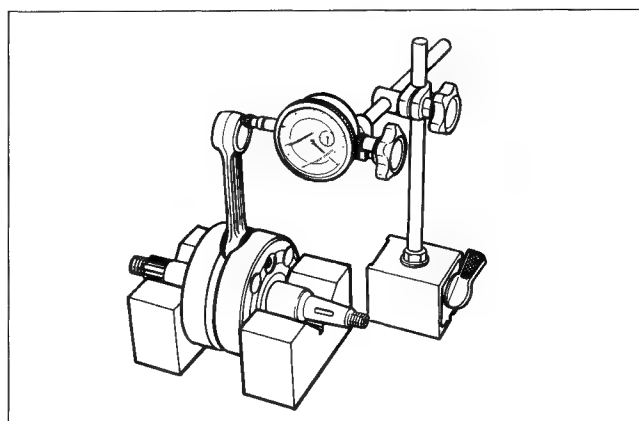
Part No.	Shim thickness
09181-25051	0.60 mm
09181-25052	0.65 mm
09181-25053	0.70 mm
09181-25054	0.75 mm
09181-25055	0.80 mm
09181-25056	0.85 mm
09181-25057	0.90 mm
09181-25058	0.95 mm
09181-25059	1.00 mm
09181-25060	1.05 mm
09181-25061	1.10 mm
09181-25062	1.15 mm
09181-25063	1.20 mm
09181-25064	1.25 mm
09181-25065	1.30 mm



CON-ROD DEFLECTION

Wear on the big end of the connecting rod can be estimated by checking the movement of the small end of the rod. This method can also check the extent of wear on the parts of the connecting rod's big end. If wear exceeds the limit, connecting rod, crank pin and crank pin bearing should all be replaced.

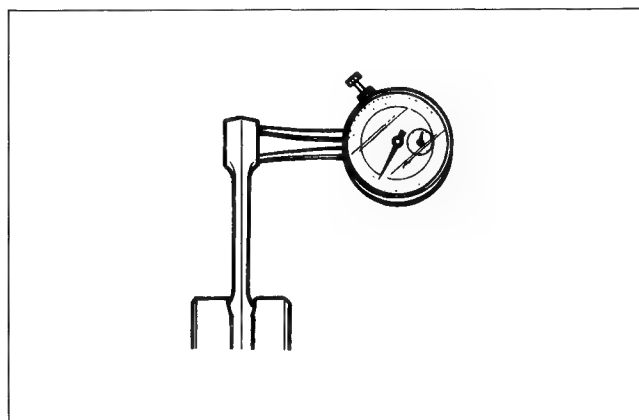
Service Limit	3.0 mm
---------------	--------

**CON-ROD SMALL END BORE I.D.**

Using a caliper gauge, measure the con-rod small end diameter.

Service Limit	14.035 mm
---------------	-----------

09900-20605	Dial calipers
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**FIRST CLUTCH****INSPECTION**

The FB100 are equipped with an centrifugal type automatic clutch. The engagement of the clutch is governed by engine RPM.

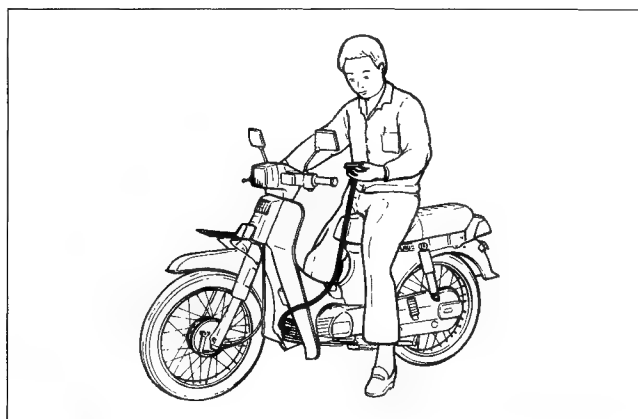
To insure proper performance and longevity of the clutch assemblies, it is essential that the clutches engage smoothly and gradually. Two inspection checks must be performed to thoroughly check the operation of the drivetrain. Follow the procedures listed.

ENGAGEMENT R/MIN

STD	2000 r/min
Tolerance	± 200 r/min

INITIAL ENGAGEMENT INSPECTION

- Warm the motorcycle up to normal operation temperature.
- Connect an electric tachometer to the engine.
- Seated on the motorcycle with the motorcycle on level ground, shift into the Low gear, increase the engine RPM slowly and note the RPM at which the motorcycle begins to move forward.

**CLUTCH "LOCK-UP" INSPECTION**

Perform this inspection to determine if the clutch is engaging fully and not slipping.

- Warm the engine to normal operating temperatures.
- Connect an electric tachometer to the engine.
- Apply the rear brake as firm as possible.
- Briefly open the throttle fully and note the maximum engine RPM sustained during the test cycle.

CAUTION:

Do not apply full power for more than 10 seconds or damage to the clutch or engine may occur.

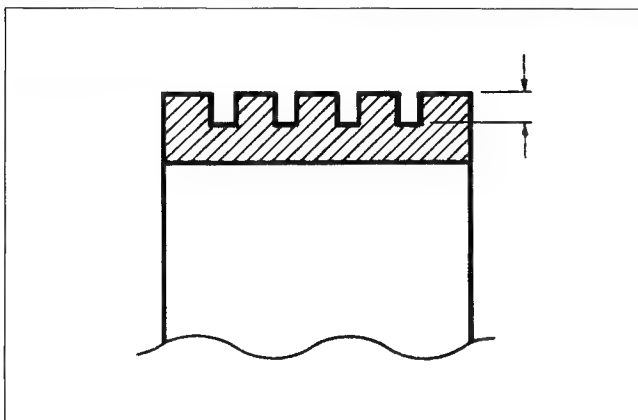
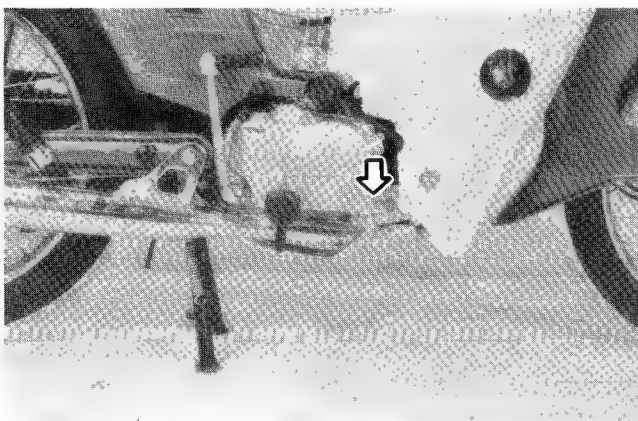
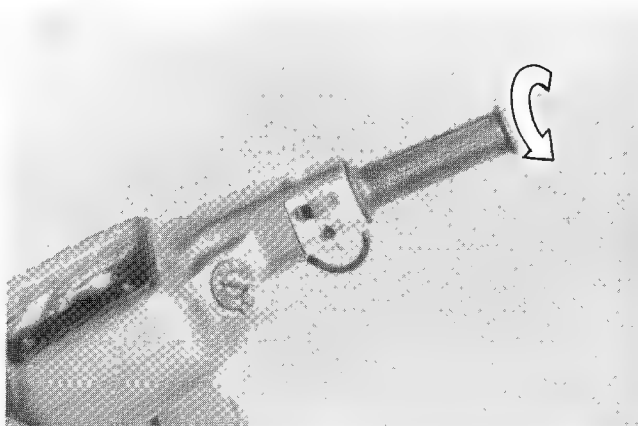
LOCK-UP R/MIN

STD	3200 r/min
Tolerance	± 300 r/min

If the engine r/min does not coincide with the specified r/min range then disassemble the clutch.

- Clutch shoe – inspect the shoes visually for chips, cracking, uneven wear, burning and check the depth of the grooves on the shoes. If there is no groove at any part of the shoes, replace them as a set.

Service Limit	No groove at any part
---------------	-----------------------



Inspecting clutch shoe groove.

- Clutch springs – visually inspect the clutch springs for stretched coils or broken coils.

CAUTION:

Clutch shoes or springs must be changed as a set and never individually.

- Clutch wheel – inspect visually the condition of the inner clutch wheel surface for scoring, cracks, or uneven wear.

GEAR SHIFTING CLUTCH**DRIVE PLATE AND DRIVEN PLATES**

Clutch plates in service remain in oily condition as if they were lubricated with oil. Because of this condition, both drive and driven plates are subject to little wearing action and therefore last much longer. Their life depends largely on the quality of oil used in the clutch and also on the way the clutch is operated.

These plates are expendable, they are meant to be replaced when found worn down or the respective limit: use a caliper to check thickness.

09900-20101

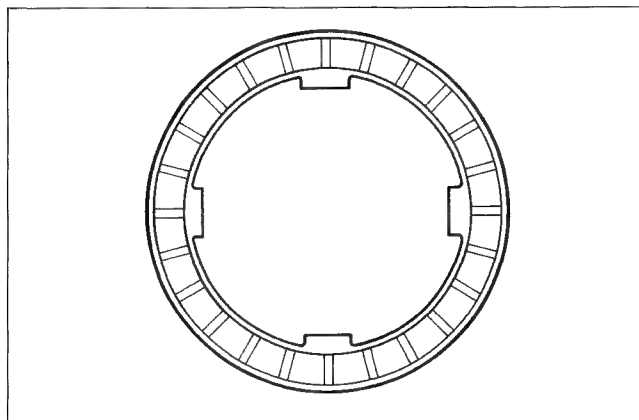
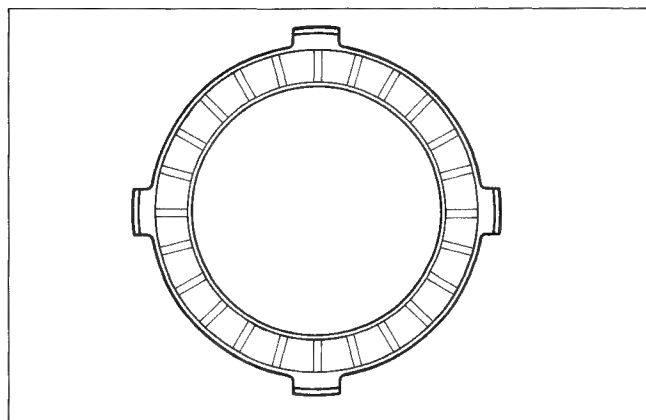
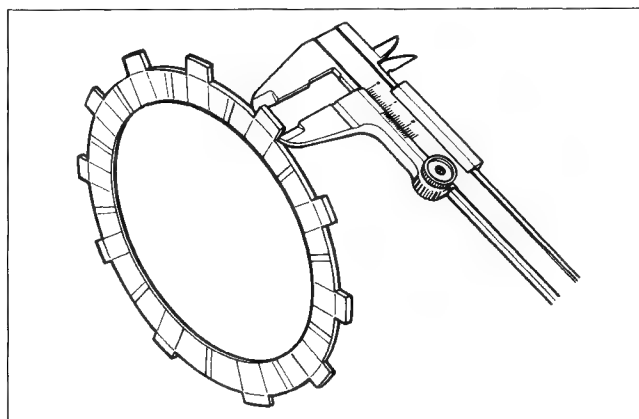
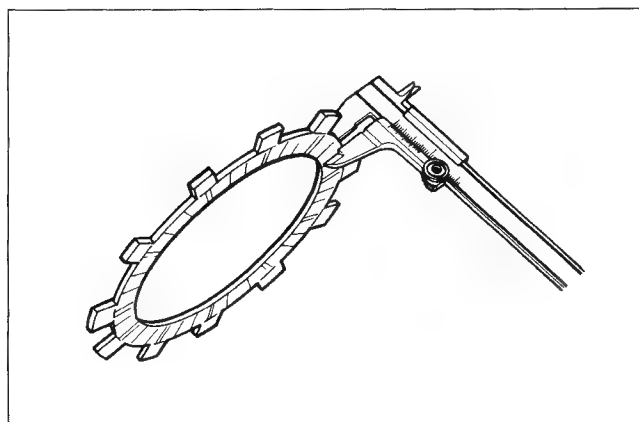
Vernier calipers (150 mm)

Drive plate

Item	Service Limit
Thickness	2.0 mm (No groove)
Claw width	15.55 mm

Driven plate

Item	Service limit
No. 1	1.6 mm (No groove)
No. 2	2.2 mm (No groove)



GEAR SHIFTING FORK

Using a thickness gauge, check the shifting fork clearance in the groove of its gear.

This clearance for each of the two shifting forks plays an important role in the smoothness and positiveness of shifting action. Each fork has its prongs fitted into the annular groove provided in its gear. In operation, there is sliding contact between fork and gear and, when a shifting action is initiated, the fork pushes the gear axially. Too much a clearance is, therefore, liable to cause the meshed gears to slip apart.

If the clearance checked is noted to exceed the limit specified, replace the fork or its gear, or both.

09900-20803	Thickness gauge
-------------	-----------------

Shift fork – groove clearance

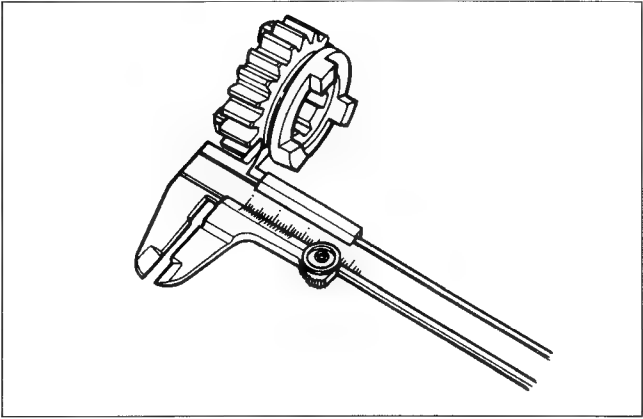
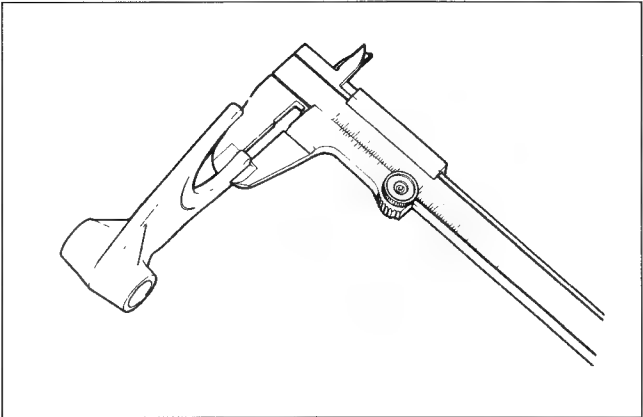
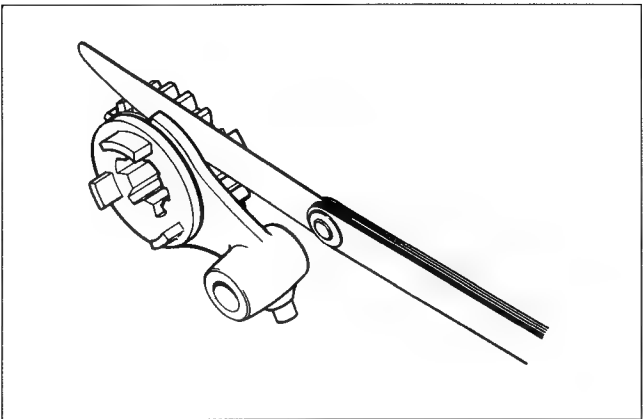
	Service Limit
No. 1	0.5 mm
No. 2	

Shift fork groove width

Standard	4.5 – 4.6 mm
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Shift fork thickness

Standard	4.3 – 4.4 mm
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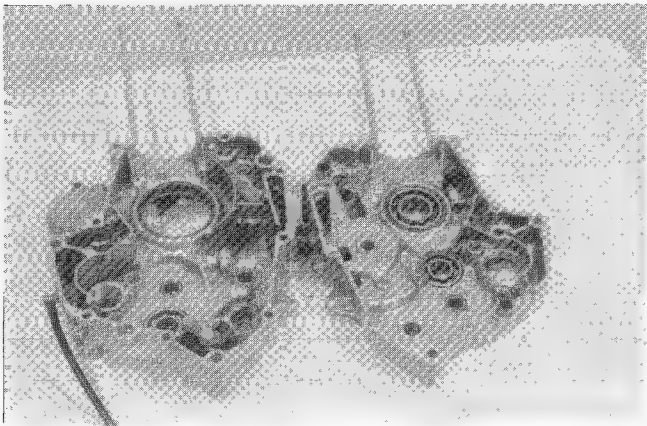
ENGINE REASSEMBLY

Reassembly is generally performed in the reverse order to disassembly, but there are a number of reassembling steps that demand or deserve detailed explanation or emphasis. These steps will be taken up for respective parts and components.

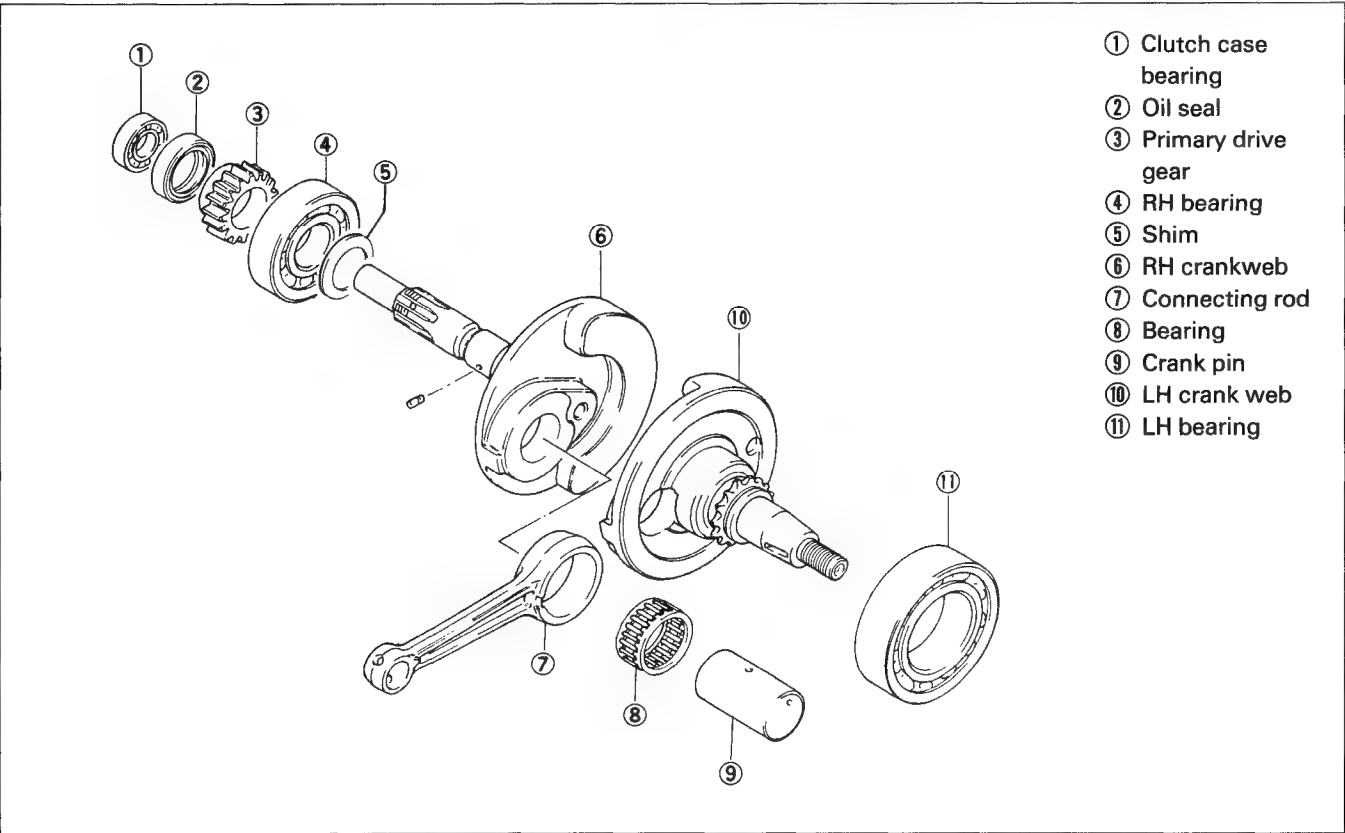
BEARINGS

Insert the bearings into the crankcase by using the special tools. After the bearing is installed, be sure to lubricate to prevent initial wear.

09913-70122	Bearing installer
09913-75510	Bearing installer
09914-79610	Bearing installer

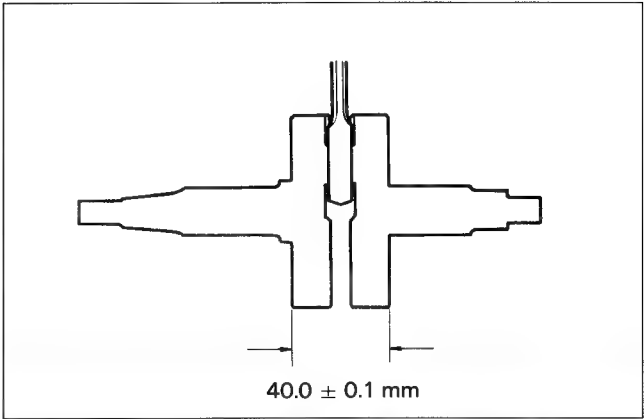


CRANKSHAFT



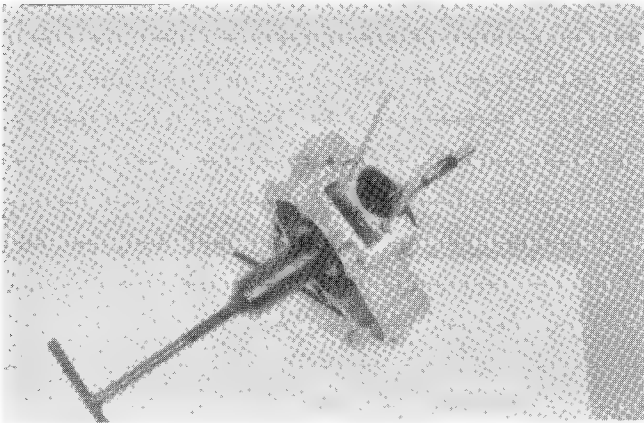
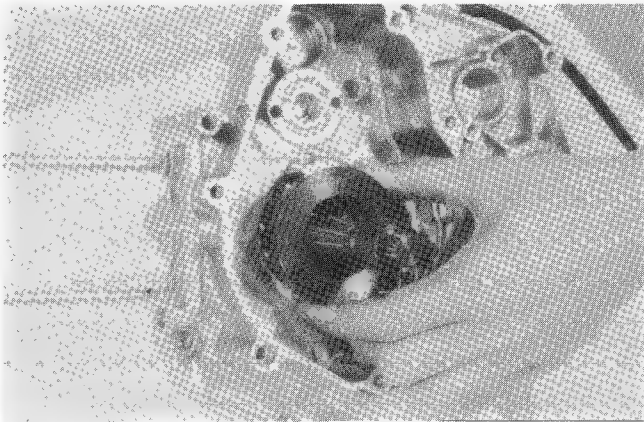
Decide the length between the webs referring to the figure below when reassembling the crankshaft.

Standard width between webs	40.0 ± 0.1 mm
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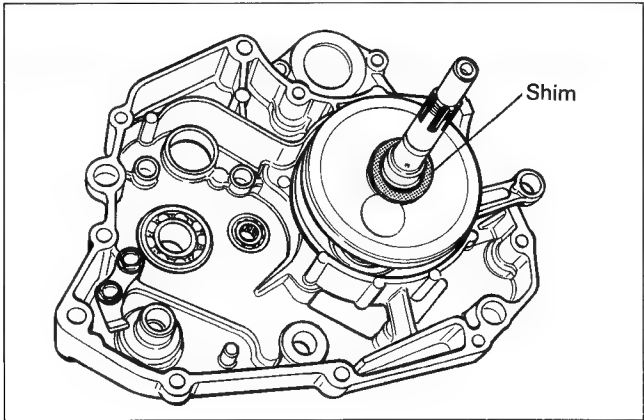


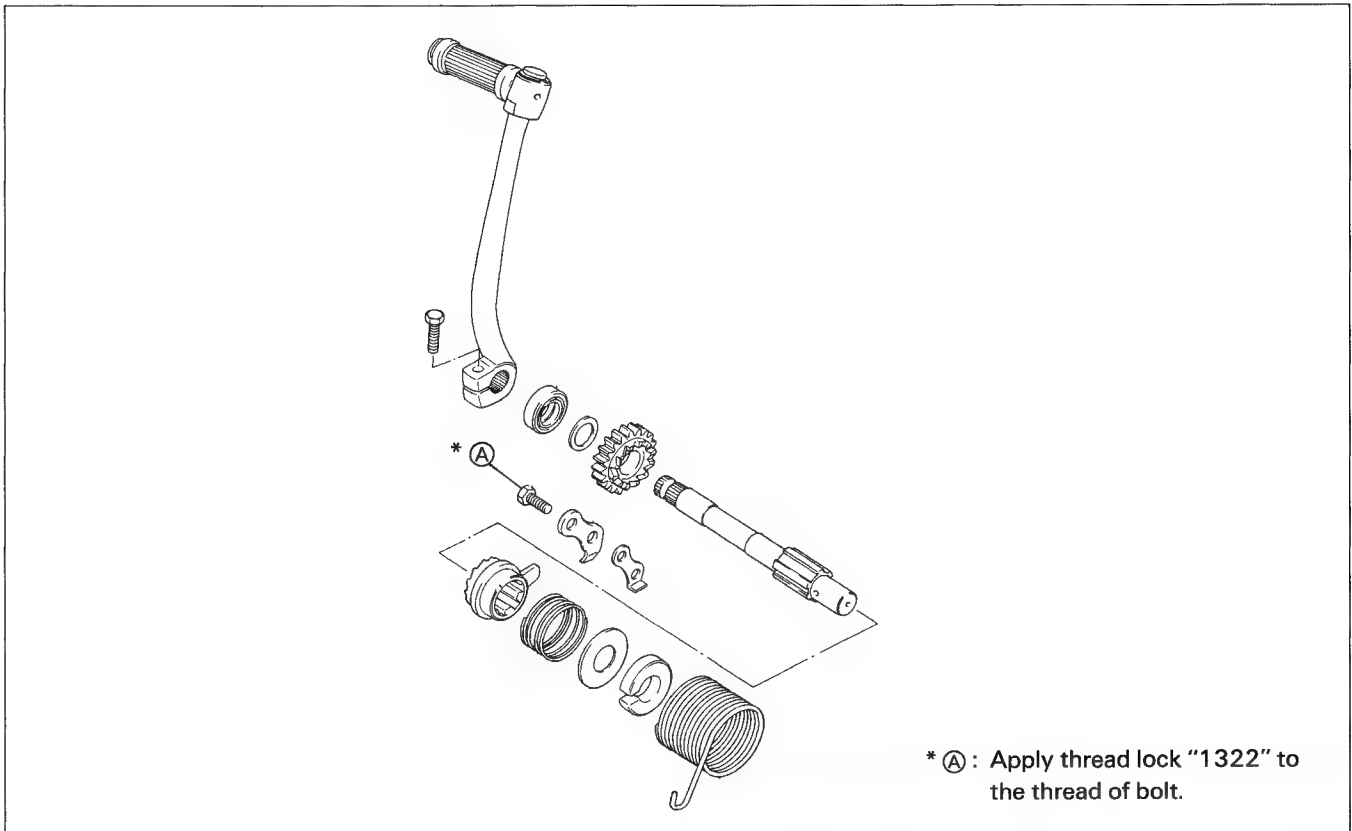
- Install the crank shaft to the left crankcase by using the special tools.

09910-32812	Crankshaft installer
09911-11310	Attachment
09910-32820	Spacer

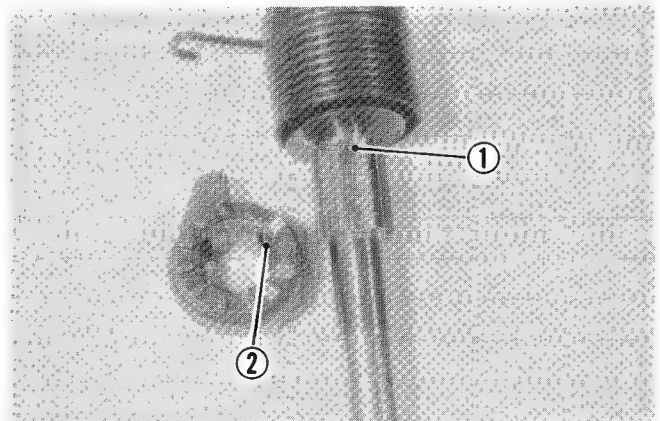


- Install the shim on the right side of cankshaft.

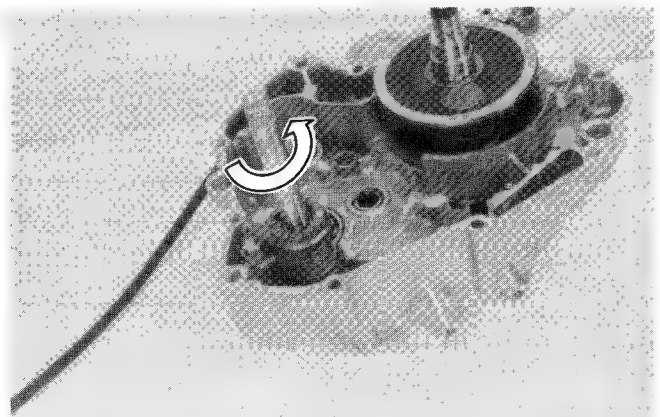


KICK

- Align the punch mark ① of kick starter shaft with punch mark ② of kick starter.

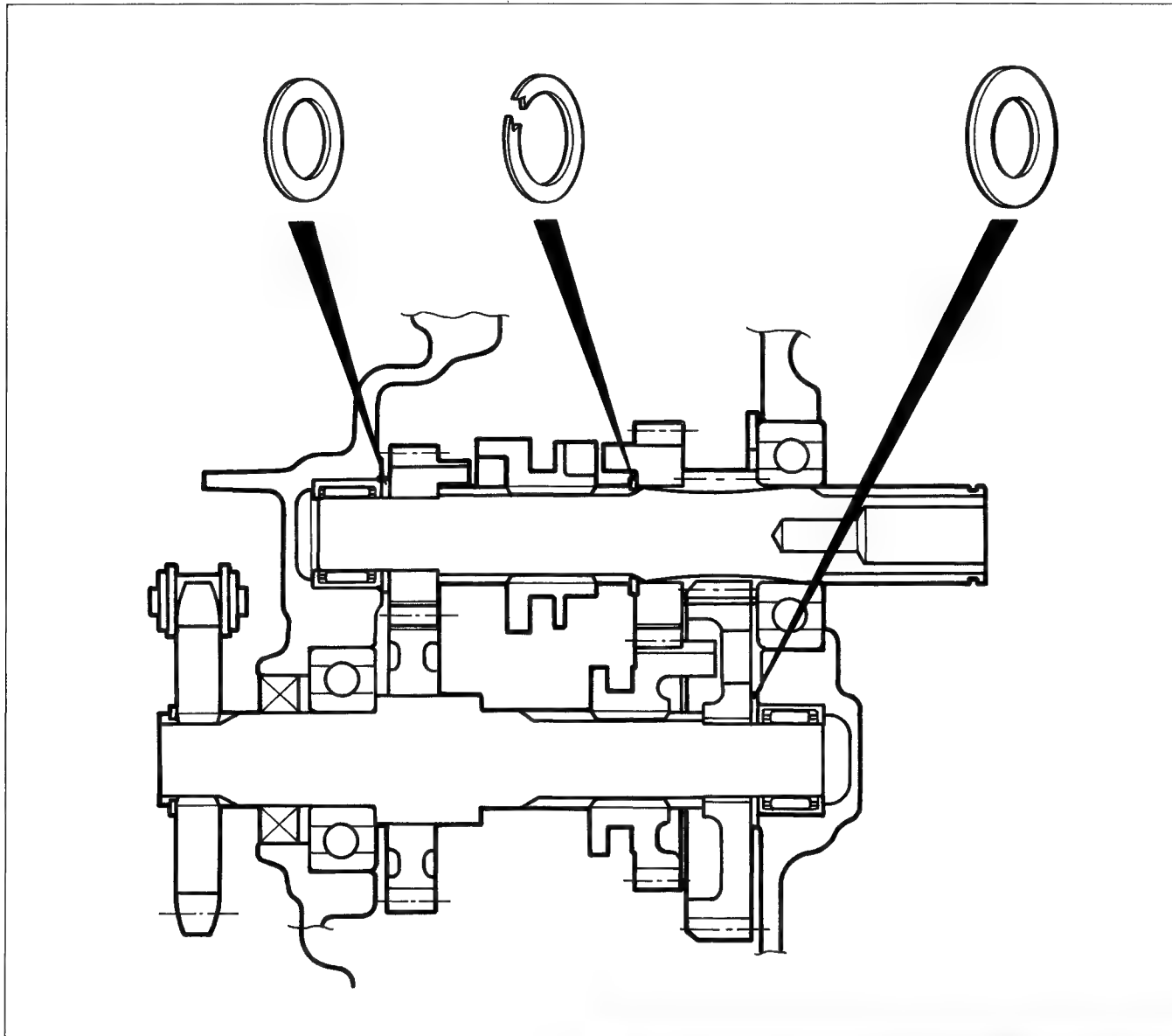


- Turn the kick starter shaft counter-clockwise and then lock the kick starter with kick starter guide.

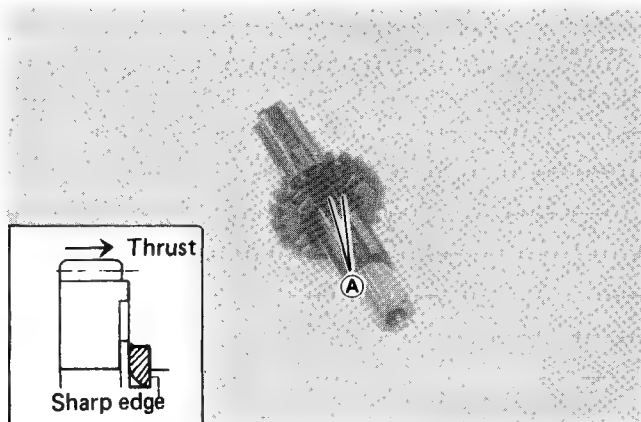


TRANSMISSION

In reassembling the transmission, attention must be given to the locations and positions of washers and circlips. The cross sectional view given here will serve as a reference for correctly mounting the gears, washers and circlips.

**CAUTION:**

- * Seat the circlip in the groove and its ends **(A)** should be located as shown in the photo.
- * When mounting circlip, pay attention to the direction of the circlip. Fit it to the rounded side against the gear surface.



GEAR SHIFT FORK

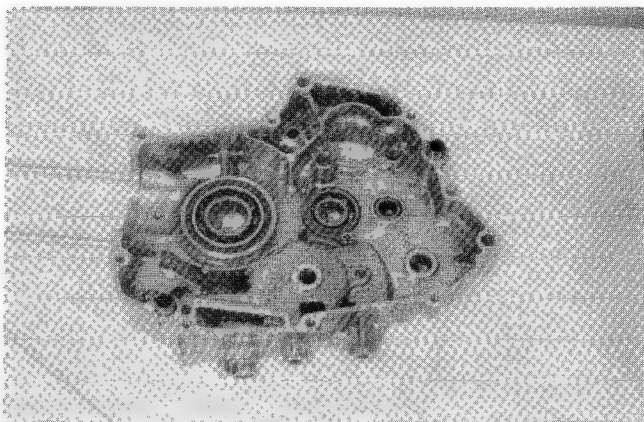
- No. 2 gear shift fork has spacer.



CRANKCASE

Wipe the crankcase mating surfaces (both surfaces) with cleaning solvent and coat one of a pair with SUZUKI bond No. 1215 in the usual manner, just before assembling the crankcase. Set the two positioning pins to the crankcase.

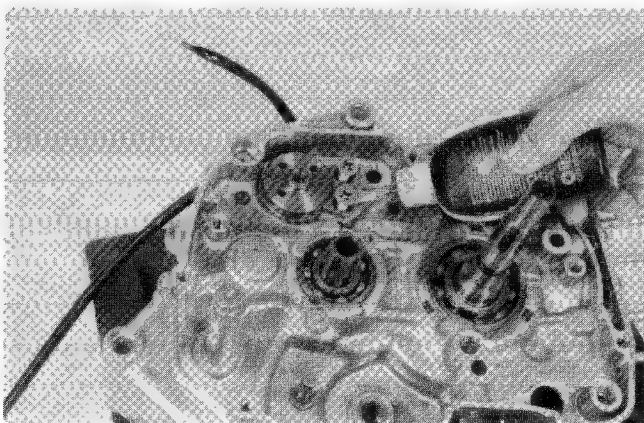
99000-31110	SUZUKI Bond No. 1215
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SHIFT CAM RETAINER

- Install the shift cam retainer after applying thread lock "1322" to the screws.

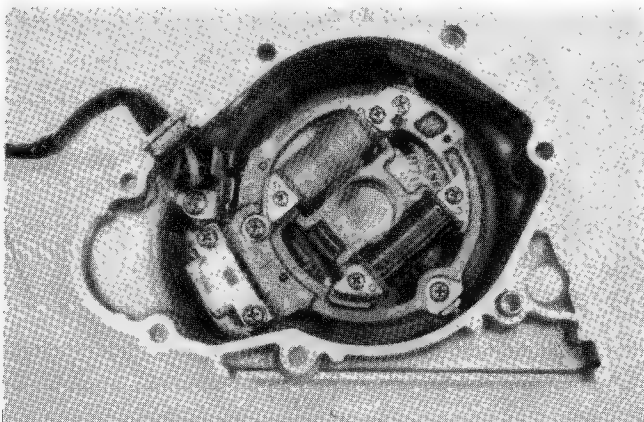
99000-32110	Thread lock "1322"
-------------	--------------------



ROTOR AND STATOR

- Install the stator to magneto cover after applying thread lock "1342" to the screws.

99000-32050	Thread lock "1342"
-------------	--------------------

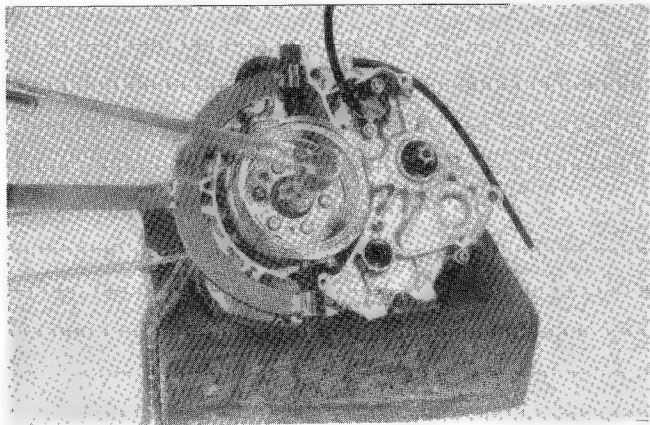
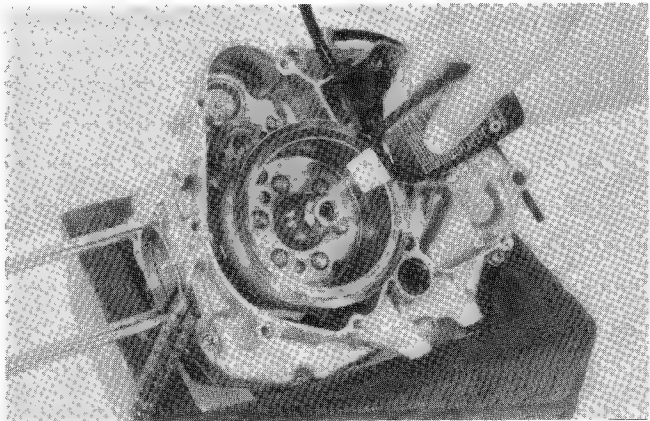


- Clean thoroughly both mating surfaces of rotor and crankshaft with cleaning solvent. Then fix the rotor with the key. Apply Thread Lock Super "1303" to the thread and tighten the nut by using the special tool.

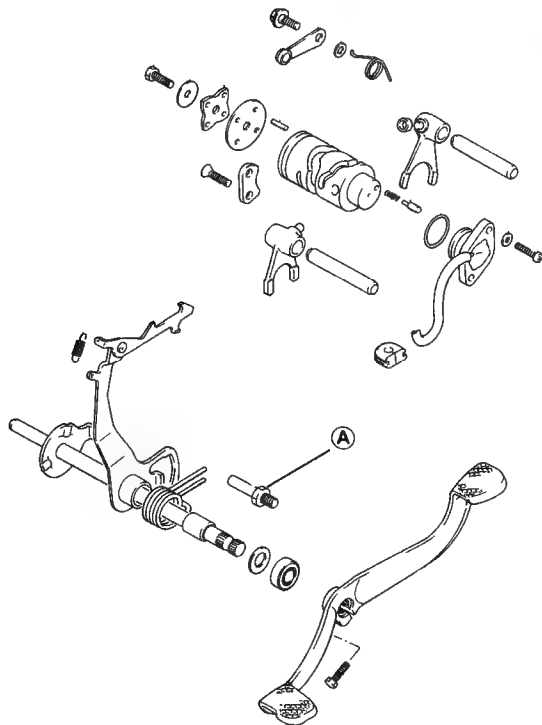
99000-32030	Thread Lock Super "1303"
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09930-44912	Rotor holder
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Tightening torque	35 – 43 N·m (3.5 – 4.3 kg-m)
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GEARSHIFT



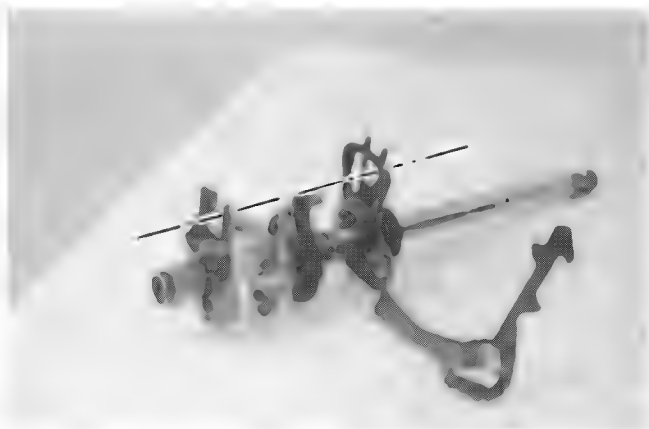
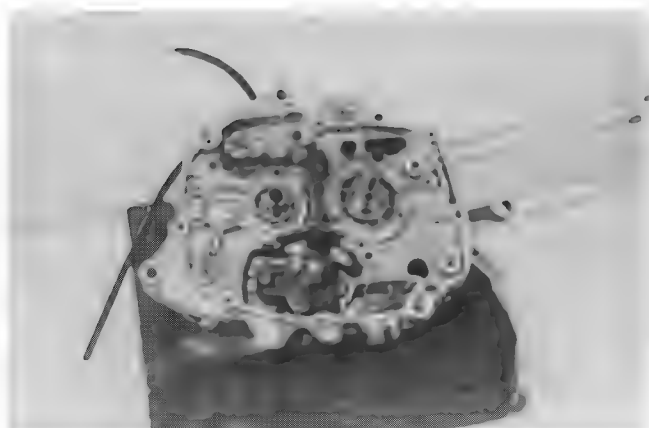
Ⓐ Apply thread lock 1303 to thread of shift arm stopper.

Tightening torque		
Item	N·m	kg-m
Ⓐ	15 – 23	1.5 – 2.3

- When installing the gear shift lever, align the stopper bolt with gear shift lever relating part.

NOTE:

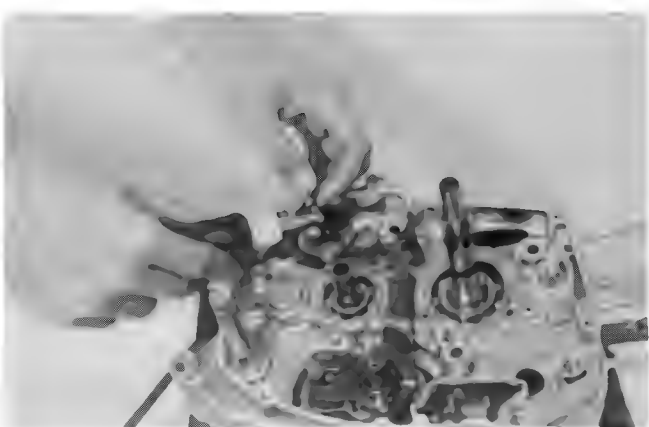
Install the bearing as shown in the photograph.



When install the shift cam pin bolt, apply thread lock "1322" to thread.

99000-32110

Thread lock "1322"



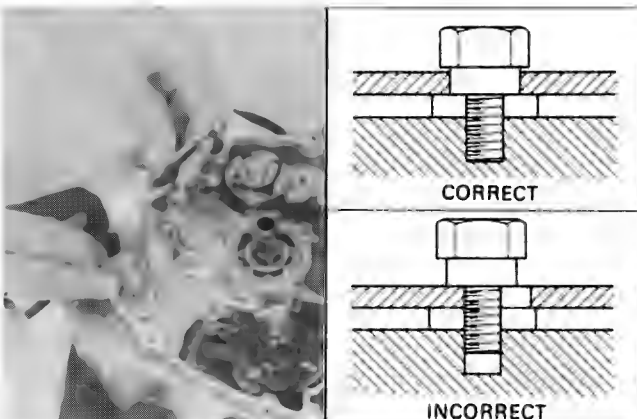
When install the shift cam stopper bolt, apply thread lock "1342" to thread.

99000-32050

Thread lock "1342"

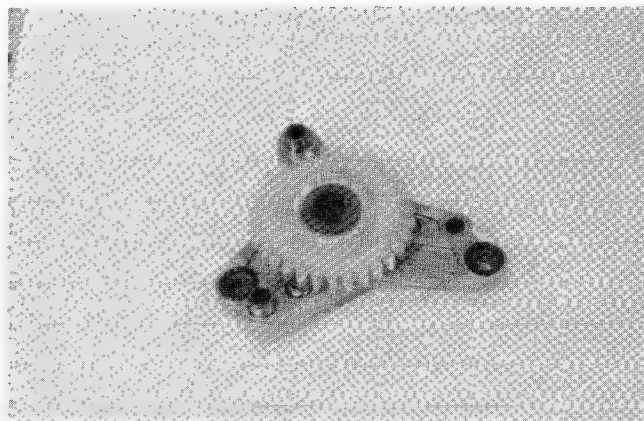
CAUTION:

When installing the cam stopper as illustrated.



OIL PUMP

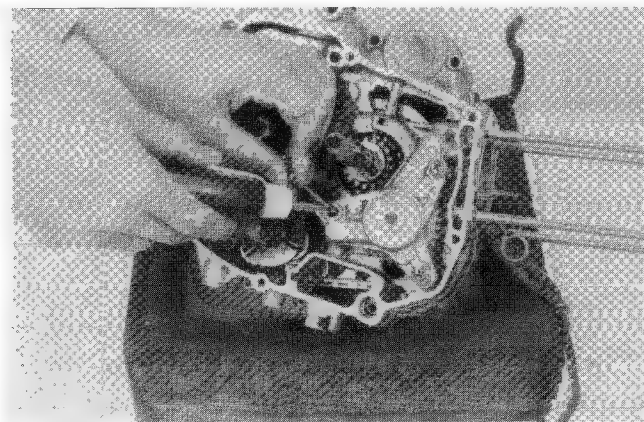
- When installing the oil pump, use dawl pin and new O-rings.



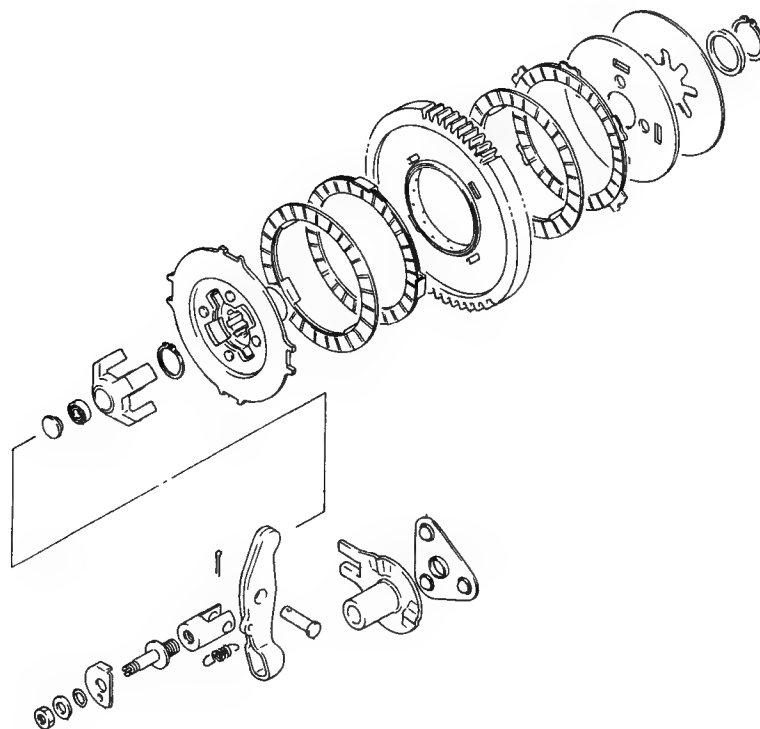
- Apply thread lock "1342" to the oil pump securing screws.

99000-32050

Thread lock "1342"



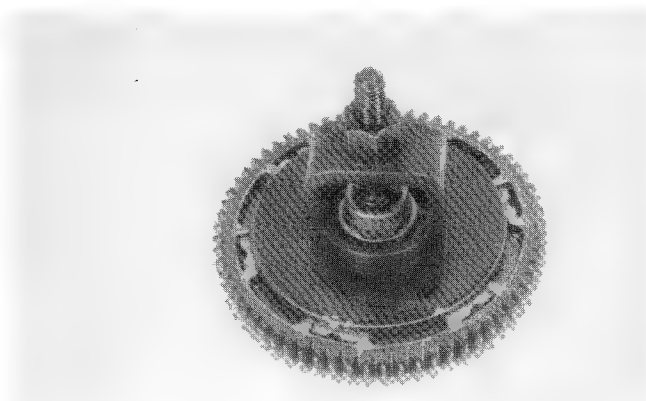
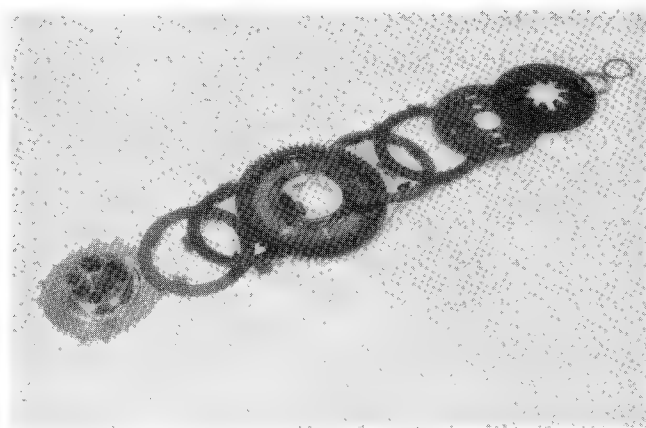
GEAR SHIFTING CLUTCH



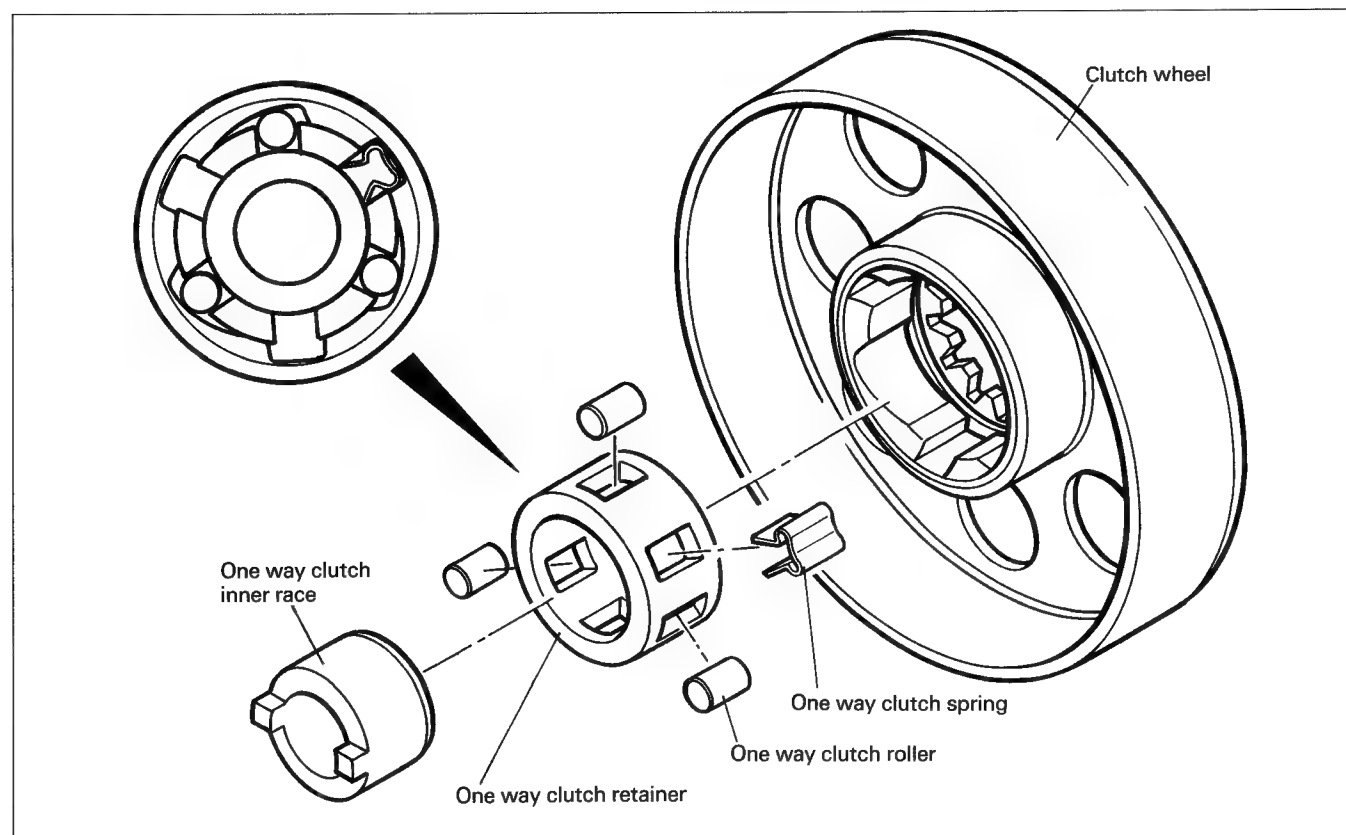
- Install the gear shifting clutch by using the circlip.

09900-06107	Snap ring pliers
09920-33510	Clutch spring compression

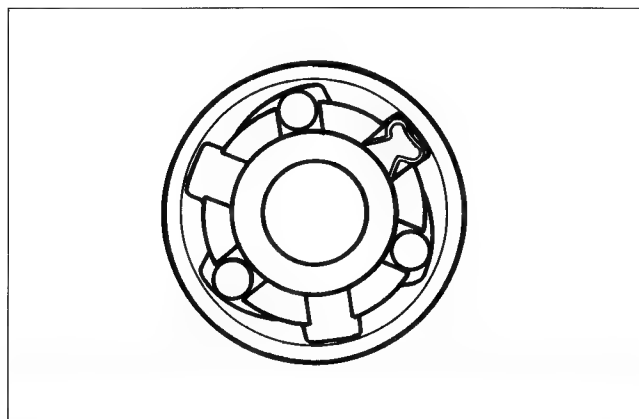
CAUTION:
Use the new circlip.



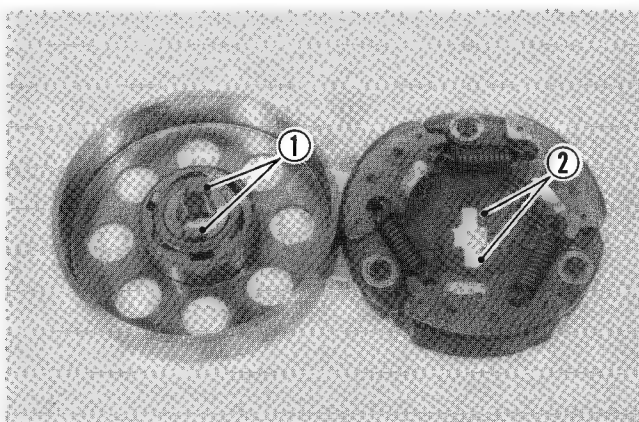
FIRST CLUTCH



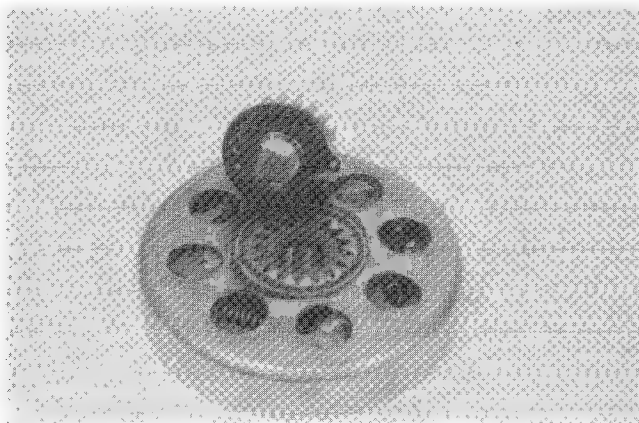
- Install the one way clutch to clutch housing as shown in the illustration.



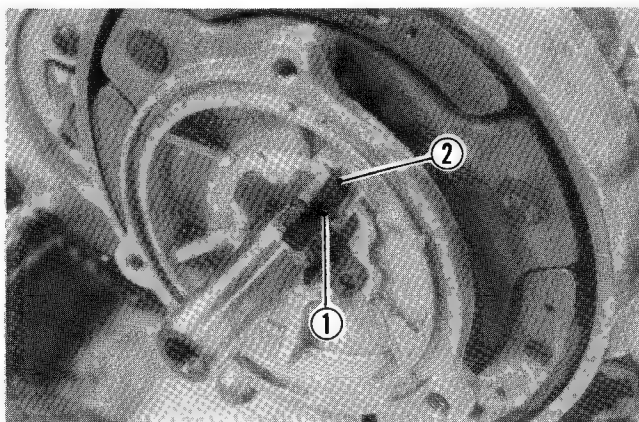
- When installing the clutch shoe in the clutch housing, align the boss ① of one way clutch inner with slit ② of clutch shoe.



- After installing the primary drive gear to clutch housing, install it on the crankshaft.



- Align the hole ① of crankshaft with slot ② of oil filter case.



- Tighten the oil filter nut to specified torque by using the special tool.

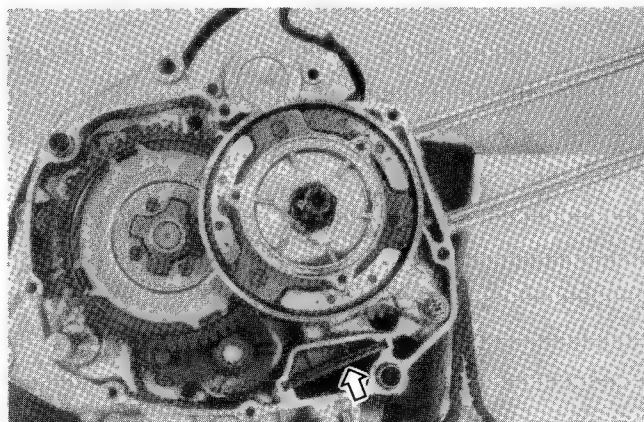
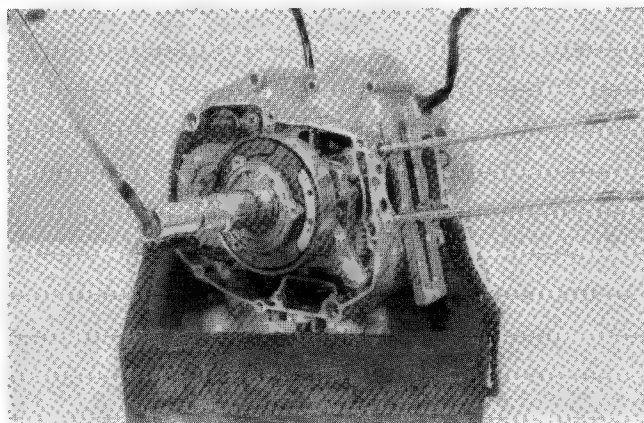
Tightening torque	55 – 70 N·m (5.5 – 7.0 kg-m)
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09910-20115	Con rod holder
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- Bent the lock washer.
- Apply motor oil to clutch push piece and crankshaft.

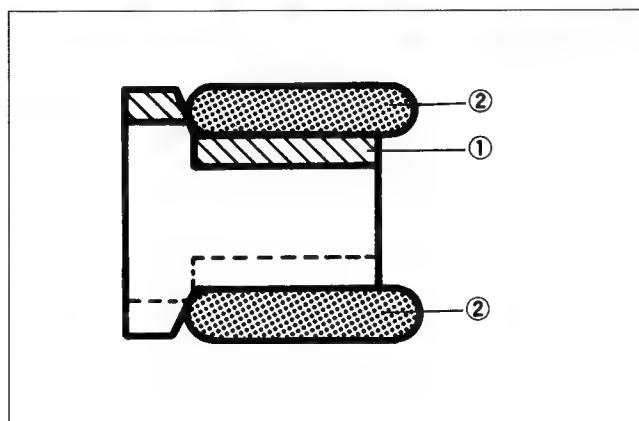
CLUTCH ADJUSTMENT

Refer to page 3-18.

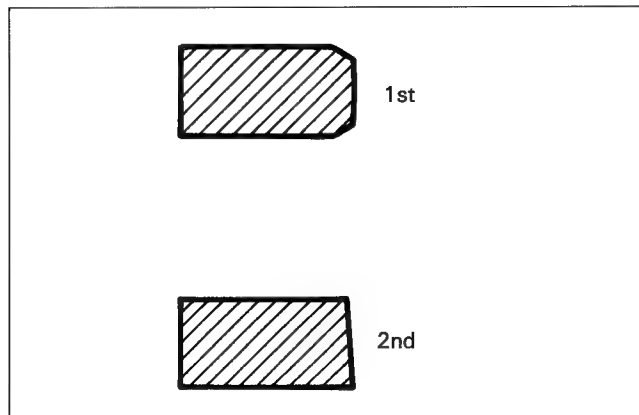


PISTON AND RING

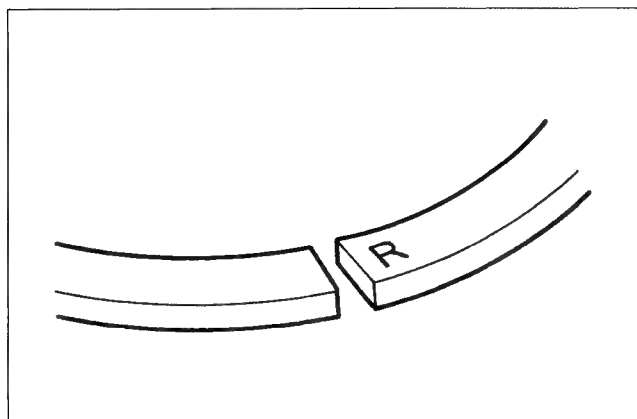
Install spacer ① into the bottom ring groove first. Then install both side rails ②, one on each side of the spacer. The spacer and side rails do not have a specific top or bottom when they are new. When reassembling used parts, install them in their original place and direction.



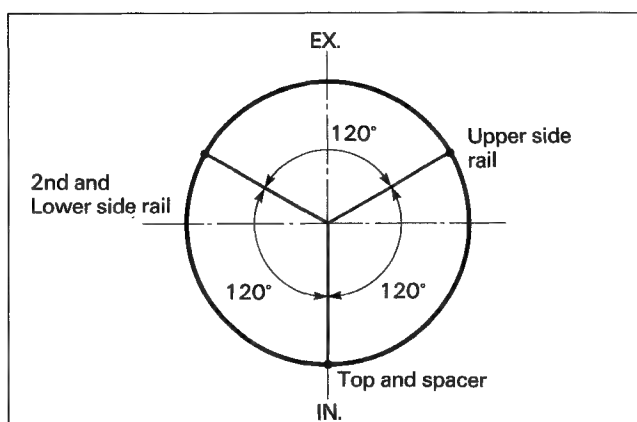
Top ring and 2nd ring differ in the shape of ring face and the face of top ring is chrome-plated whereas that of 2nd ring is not. The color of 2nd ring appears darker than that of the top one.



Top and 2nd rings have the letter "R" marked on the top. Be sure to bring the marked side to the top when fitting them to the piston.



Position the gaps of the three rings as shown. Before inserting piston into the cylinder, check that the gaps are so located.



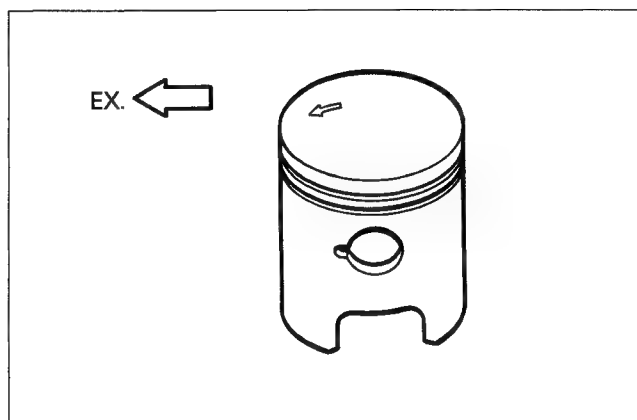
The following are reminders for piston installation:

- Rub a small quantity of SUZUKI MOLY PASTE onto the piston pin.
- Place a clean rag over the cylinder base to prevent piston pin circlip from dropping into crankcase, and then fit the piston pin circlip with long-nose pliers.

CAUTION:

Use a new piston pin circlip to prevent circlip failure which will occur with a bent one.

- When fitting the piston, turn arrow mark on the piston head to exhaust side.



CYLINDER

Before mounting the cylinder block, oil the big end and small end of the conrod and also the sliding surface of the piston.

- Inspect the oil orifice for dogged.
- Fit dowel pins to crankcase and then fit gasket.

CAUTION:

To prevent oil leakage, do not use the old gasket again, always use a new one.

- Hold each piston ring with the piston ring section properly and insert them into the cylinder. Check to insure that the piston rings are properly inserted into the cylinder skirt.

NOTE:

When mounting the cylinder, after attaching camshaft drive chain, keep the camshaft drive chain taut. The camshaft drive chain must not be caught between cam drive chain sprocket and crankcase when crankshaft is rotated.

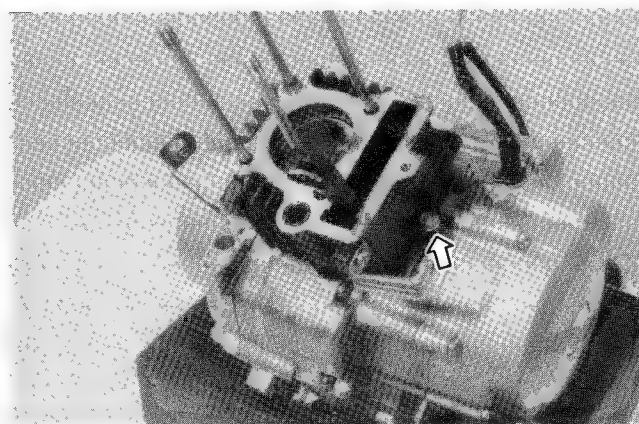
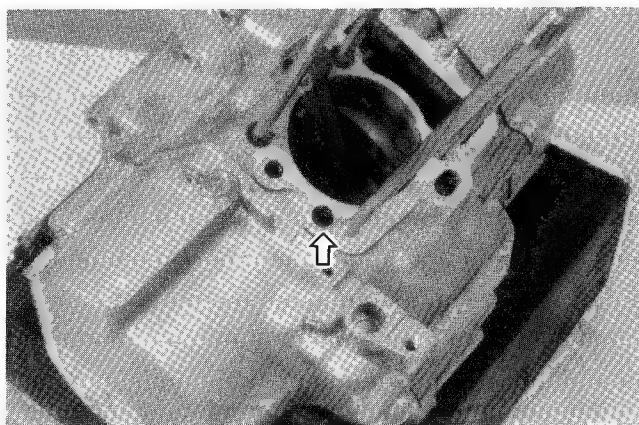
NOTE:

There is a holder for the bottom end of the cam chain guide cast in the crankcase. Be sure that the guide is inserted properly or binding of the cam chain and guide may result.

- Tighten the cylinder nut.

Tightening torque

8 – 12 N·m
(0.8 – 1.2 kg-m)



CYLINDER HEAD

VALVE AND SPRING

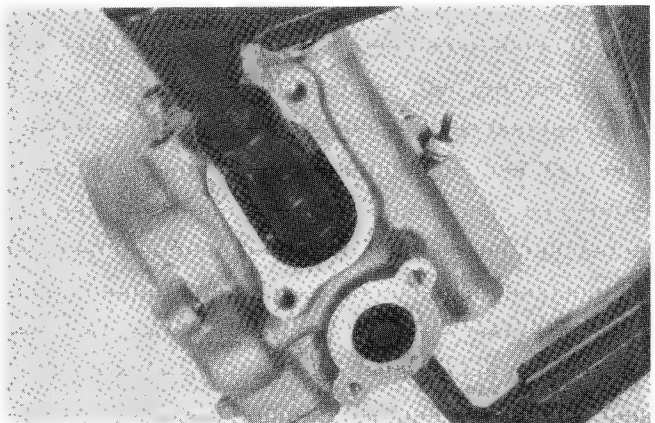
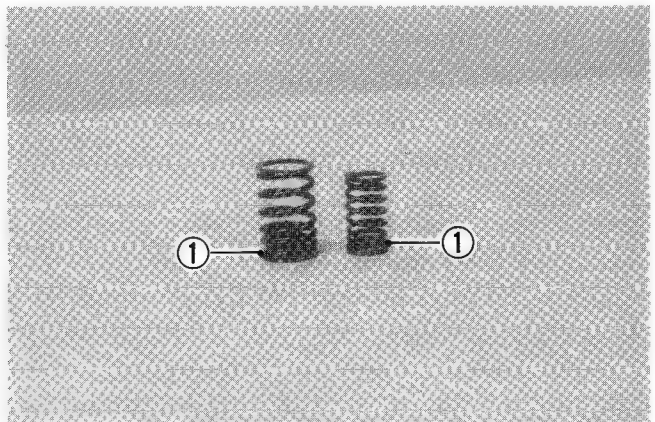
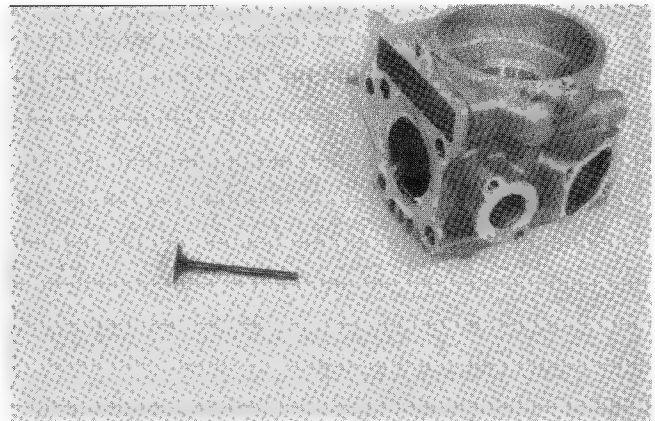
- Insert the valves, with their stems coated with (SUZUKI MOLY PASTE) all around and along the full stem length without any break. Similarly oil the lip of the stem seal.

Suzuki moly paste	99000 – 25140
-------------------	---------------

CAUTION:

When inserting each valve, take care not to damage the lip of the stem seal.

- Install valve springs, making sure that the close-pitch end ① of each spring goes in first to rest on the head. The coil pitch of both the inner and outer springs vary: the pitch decreases from top to bottom, as shown in the illustration.
- Fit valve spring retainer, compress spring with a valve lifter and insert cotters.

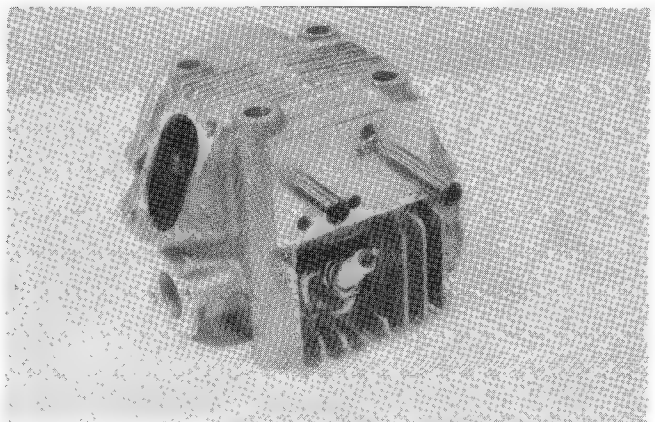


VALVE ROCKER ARM AND SHAFT

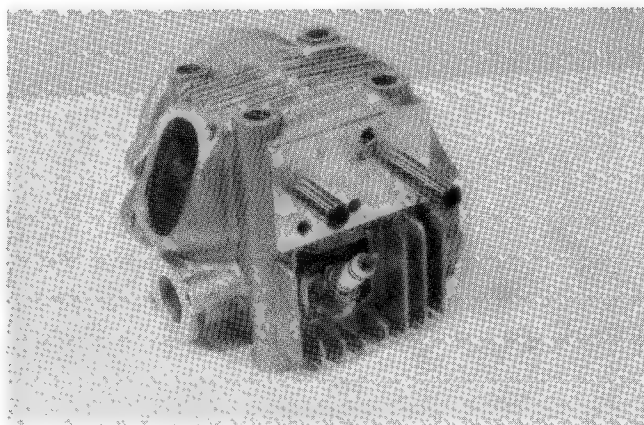
- Apply SUZUKI MOLY PASTE to the rocker arms and shaft.

NOTE:

Rocker arm shaft has two kind of shaft.



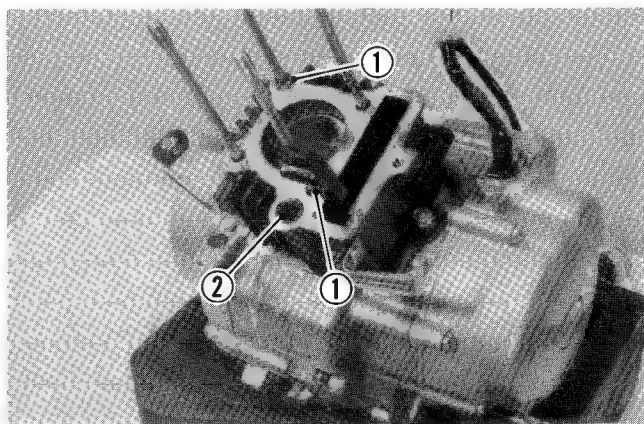
- When installing the rocker arm shaft, thread part of shaft is positioned cylinder head right cover side.



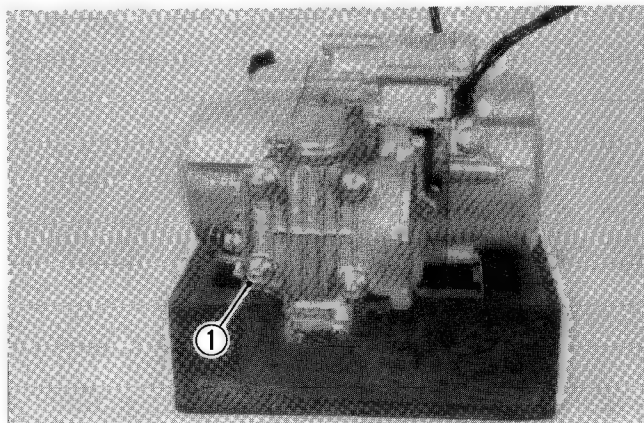
- Fit dowel pins ① and O-ring ② to cylinder head and then, attach gasket to cylinder head.

CAUTION:

Use a new cylinder head gasket to prevent oil leakage. Do not use the old gasket.



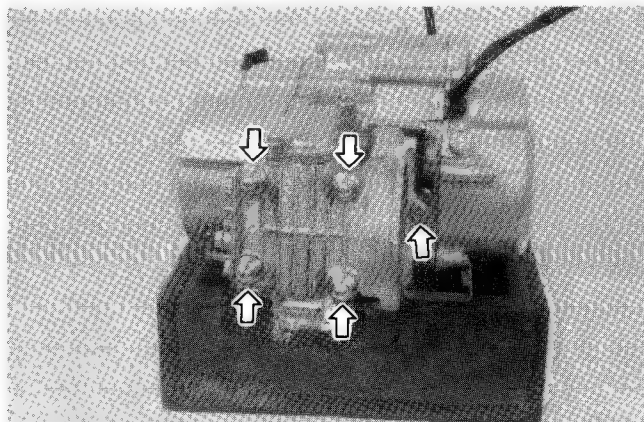
- Copper washer ① is positioned as shown in the photograph.



- Tighten the cylinder head nut to the specified torque.

Tightening torque

Cylinder head nut	18 – 22 N·m (1.8 – 2.2 kg-m)
Cylinder head bolt	8 – 12 N·m (0.8 – 1.2 kg-m)



IGNITION TIMING (TYPE I)

- Position "T" mark ① on the magneto rotor with the center of magneto cover hole ② keeping the cam shaft drive chain pulled upward.

NOTE:

If crankshaft is turned without drawing the camshaft drive chain upward, the chain will be caught between crankcase and cam chain drive sprocket.

- Align the top mark ③ of cam shaft with top mark ④ of cylinder head.

- Engage the chain on the cam sprocket and then install the cam sprocket on the cam shaft, after align top mark ⑤ of cam sprocket with top mark ④ of cylinder head.

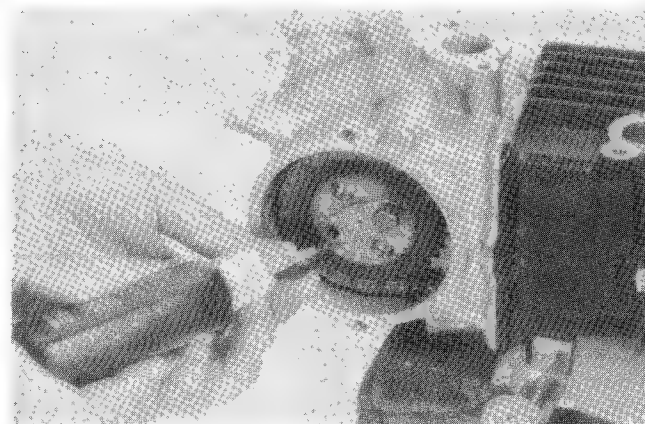
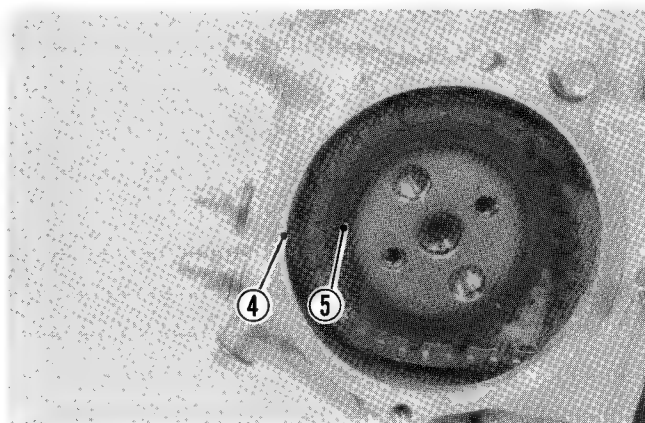
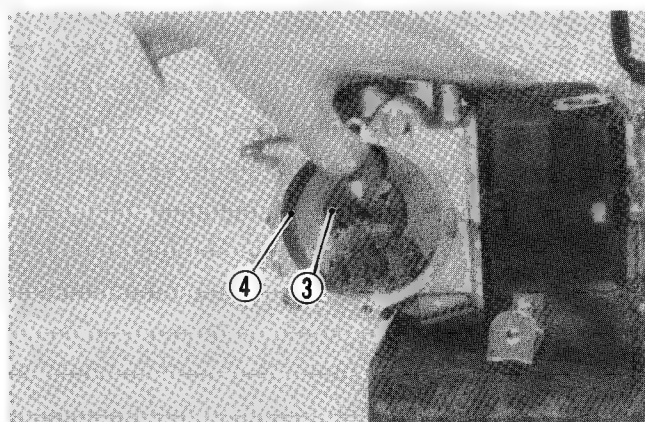
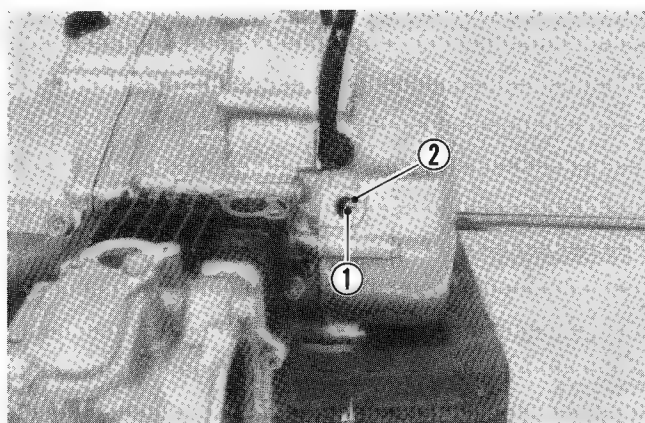
NOTE:

Do not rotate magneto rotor while doing this. When the sprocket is not positioned correctly, turn the sprocket.

- Apply THREAD LOCK SUPER "1303" to the bolts and tighten the cam sprocket.

Tightening torque	10 – 12 N·m (1.0 – 1.2 kg-m)
-------------------	---------------------------------

Thread lock super "1303"	99000-32030
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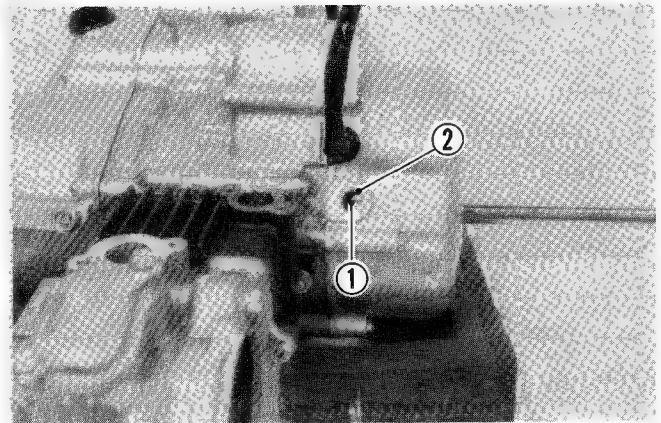


IGNITION TIMING (TYPE II)

- Position "T" mark ① on the magneto rotor with the center of magneto cover hole ② keeping the cam shaft drive chain pulled upward.

NOTE:

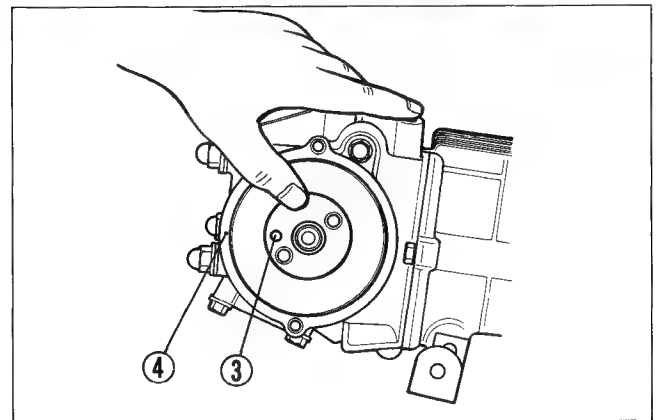
If crankshaft is turned without drawing the camshaft drive chain upward, the chain will be caught between crankcase and cam chain drive sprocket.



NOTE:

Apply grease on the cam sprocket locating pin and install the pin into the camshaft.

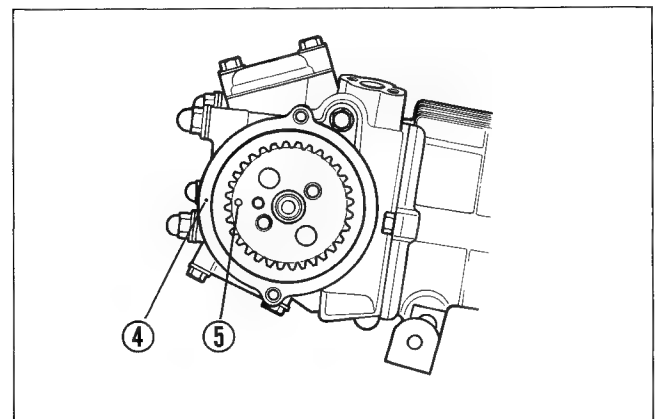
- Align the pin ③ of camshaft with top mark ④ of cylinder head.
- Engage the chain on the cam sprocket and then install the cam sprocket on the cam shaft, after align top mark ⑤ of cam sprocket with top mark ④ of cylinder head.



NOTE:

Do not rotate magneto rotor while doing this. When the sprocket is not positioned correctly, turn the sprocket.

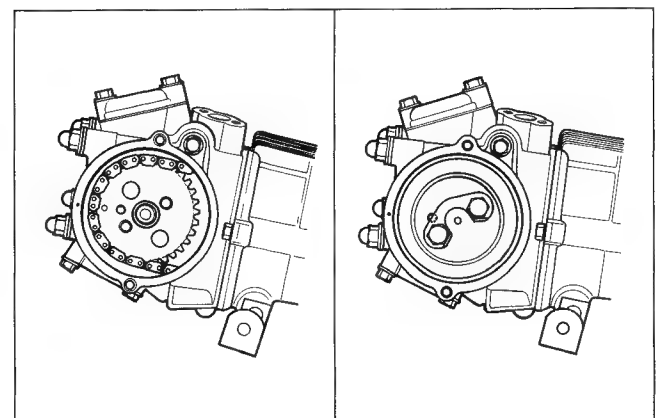
- Fit the flywheel after engaging the pin and pin hole of flywheel.
Fit lock washer so that it is covering the locating pin.
- Apply THREAD LOCK SUPER "1303" to the bolts and tighten the cam sprocket.

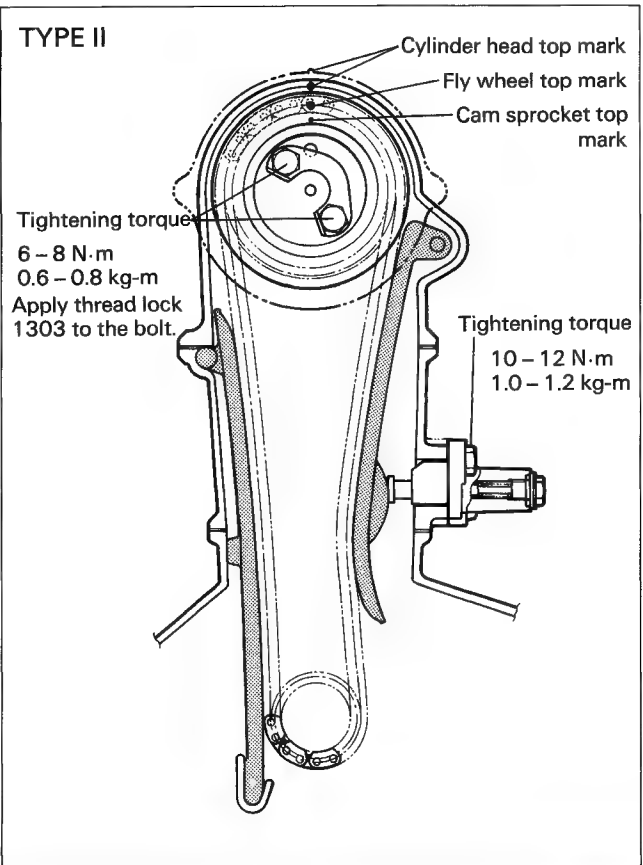
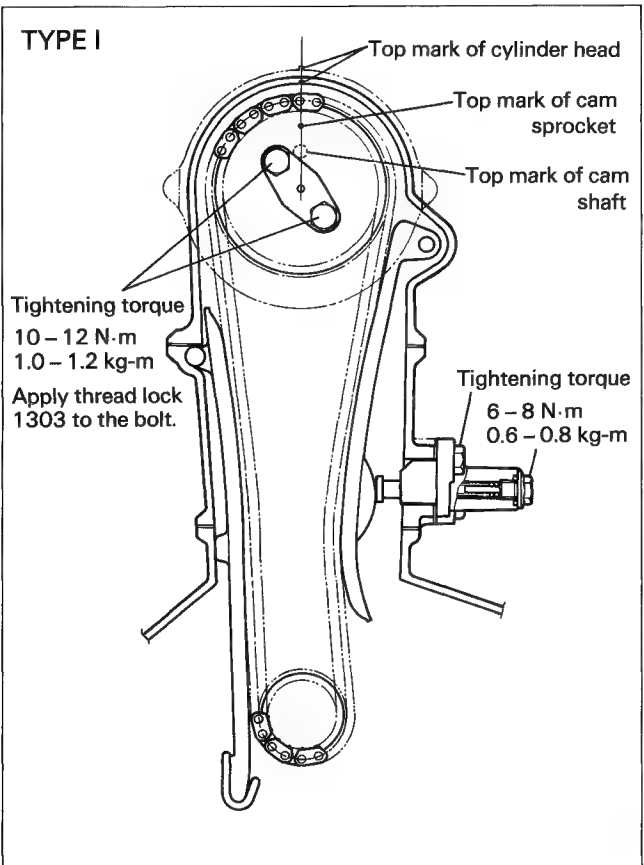


Tightening torque	10 – 12 N·m (1.0 – 1.2 kg-m)
-------------------	---------------------------------

Thread lock super "1303"	99000-32030
--------------------------	-------------

- Bend up the washer tongue positively to lock the bolts.





CHAIN TENSIONER

- Separate the bolt and spring from tensioner body.
- Install the tensioner body on the cylinder.

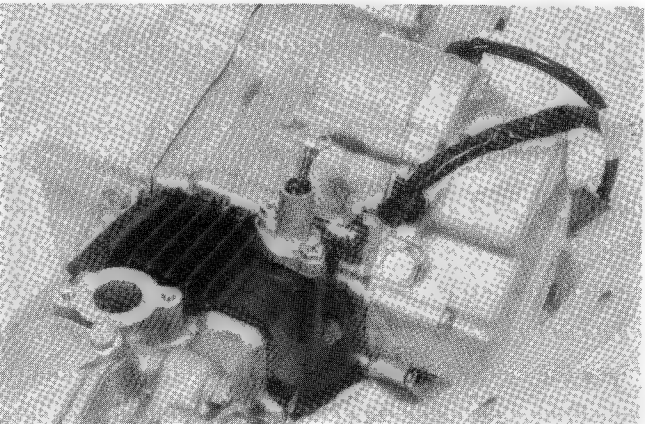
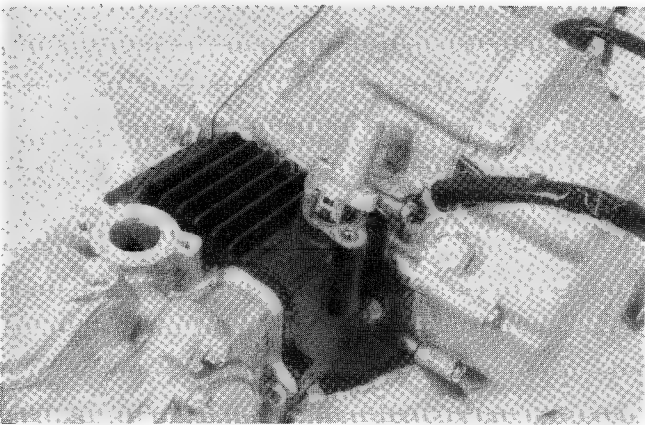
NOTE:

Racket side of tensioner is positioned cylinder head side.

Tightening torque	6 – 8 N·m (0.6 – 0.8 kg-m)
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- Then install the spring and bolt.

Tightening torque	6 – 8 N·m (0.6 – 0.8 kg-m)
-------------------	-------------------------------



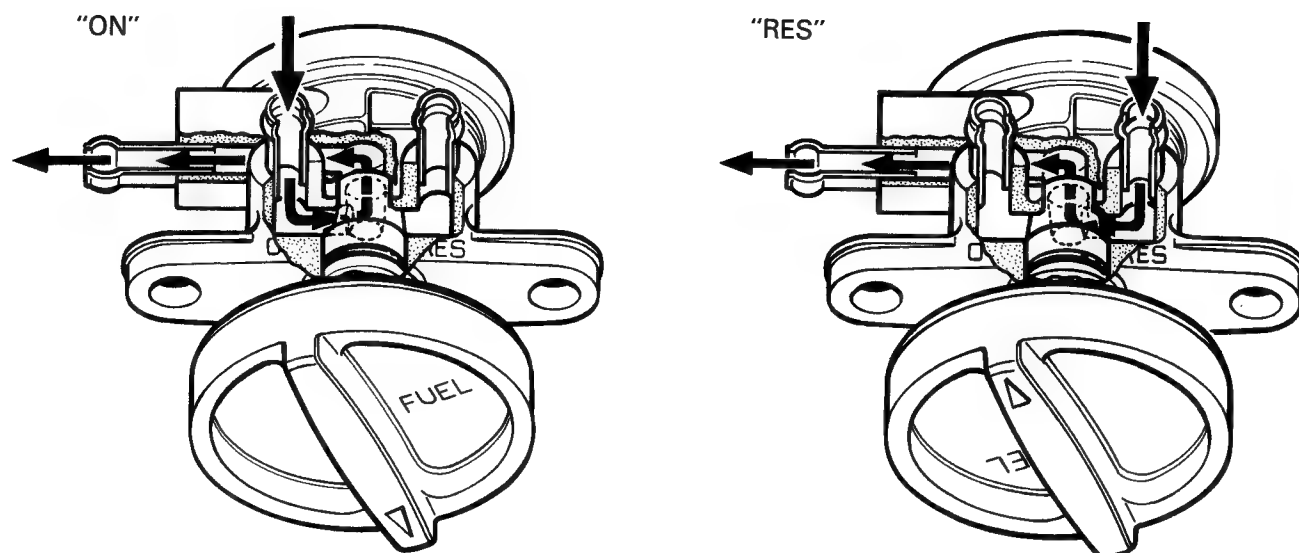
FUEL AND LUBRICATION SYSTEM

CONTENTS

<i>FUEL COCK</i>	<i>4-1</i>
<i>CARBURETOR</i>	<i>4-2</i>
<i>OIL PUMP.....</i>	<i>4-5</i>

FUEL TANK AND FUEL COCK

The fuel tank is provided with a tank cap and fuel filter. An air vent is provided in the tank cap to supply gasoline smoothly to the carburetor. The fuel cock has the structure as shown in Fig. A valve is provided at the top of the fuel cock lever and can switch over to "OFF", "ON" and "RES". With the valve ON (normal), the main passage opens. With the valve OFF, both holes close.



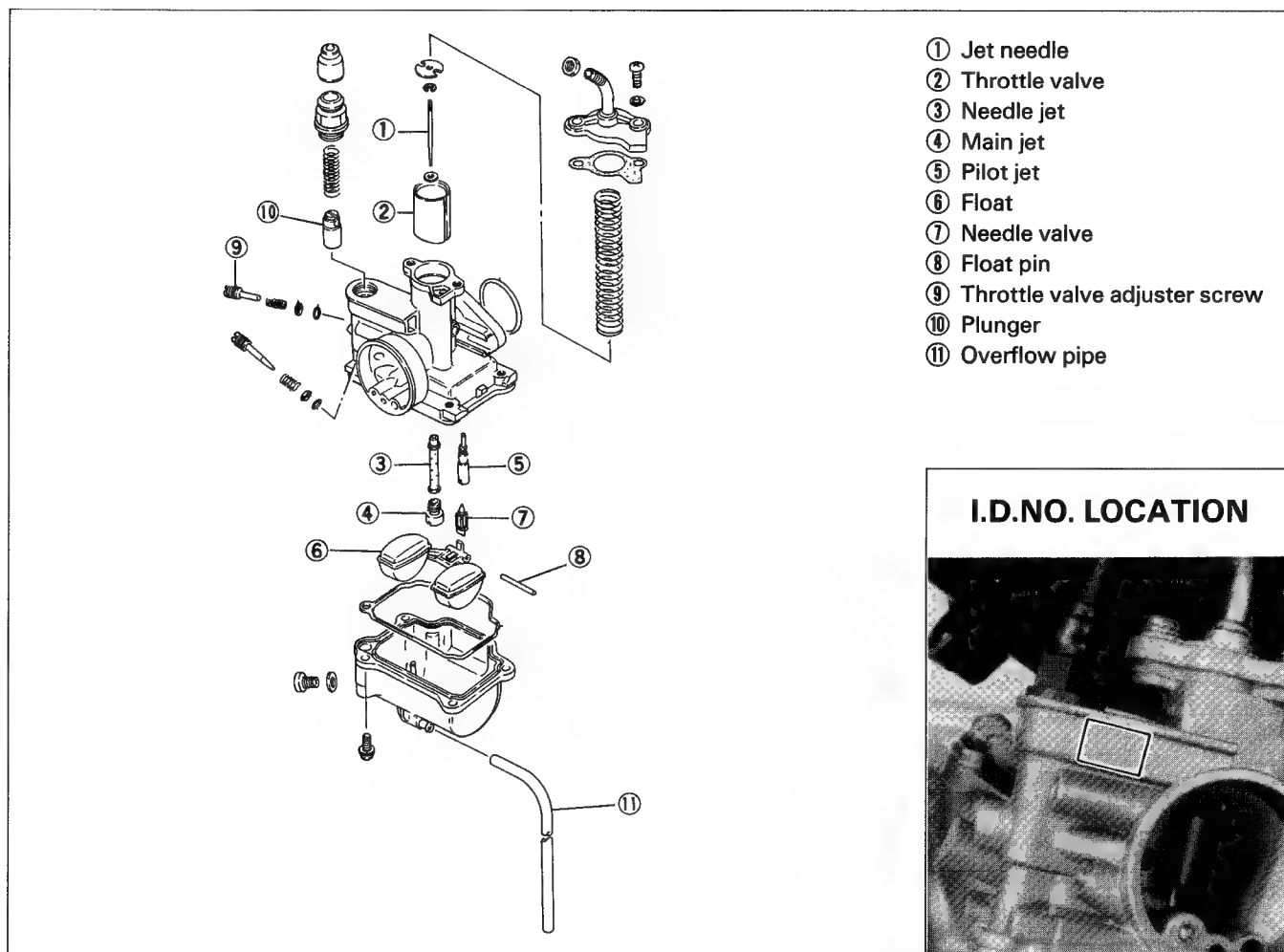
CLEAN

The fuel cock filter will collect impurities, and therefore must be periodically checked and cleaned. The fuel tank should be cleaned at the same time the fuel cock filter is being cleaned.

INSPECTION

If the fuel leaks from around the fuel cock, O-ring may be damaged. Visually inspect these parts, and replace them if necessary. Examine the air vent in the fuel cock to see if it is obstructed. Use compressed air to clean an obstructed vent.

CARBURETOR



CARBURETOR SETTING TABLE

ITEM	SPECIFICATION
Carburetor type	MIKUNI VM16SH
Bore size	16 mm
I.D. No.	30A11
Idle r/min	1400 \pm 150 r/min
Float height	16.0 \pm 1.0 mm
Main jet (M.J.)	#95
Main air jet (M.A.J.)	1.7 mm
Jet needle (J.N.)	3N8 – 4th
Needle jet (N.J.)	E-1
Cut-away (C.A.)	3.5
Pilot jet (P.J.)	#15
Pilot outlet (P.O.)	1.0 mm
Valve seat (V.S.)	1.5 mm
Starter jet (G.S.)	#22.5
Throttle cable play	0.5 – 1.0 mm

FLOAT HEIGHT ADJUSTMENT

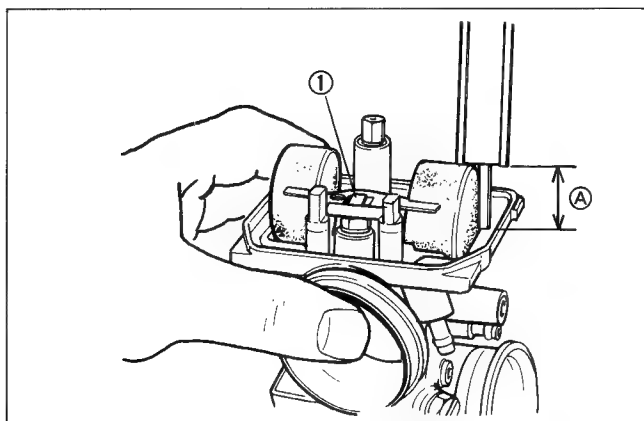
To check the float height, invert the carburetor body, holding the float arm pin so that the pin will not slip off. With the float arm kept free, measure the height \textcircled{A} while float arm is just in contact with needle valve by using the caliper. Bend the tongue ① as necessary to bring the height \textcircled{A} to this value.

NOTE:

When measuring the height, remove the gasket.

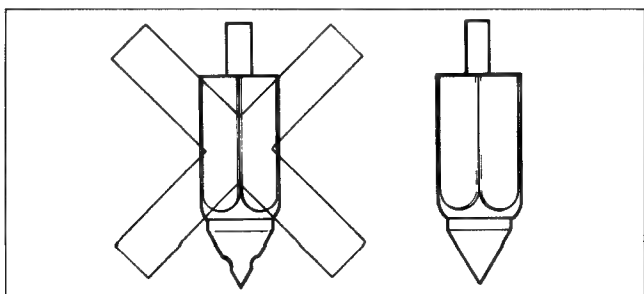
09900-20101	Vernier calipers (150 mm)
-------------	---------------------------

Float height \textcircled{A}	$16.0 \pm 1.0 \text{ mm}$
--------------------------------	---------------------------



NEEDLE VALVE INSPECTION

If foreign matter is caught between the valve seat and the needle, the gasoline will continue flowing and cause it to overflow. If the seat and needle are worn out beyond the permissible limits, similar trouble will occur. Conversely, if the needle sticks, the gasoline will not flow into the float chamber. Remove the carburetor, float chamber and floats, and clean the float chamber and flow at parts with gasoline. If the needle is worn as shown below, replace it together with a valve seat. Clean the fuel passage of the mixing chamber with compressed air.



DIAGNOSIS OF CARBURETOR

Whether the carburetor is producing a proper mixture of fuel and air can be checked by making a road test (simulating the way the user operates the machine) with a standard spark plug (refer to service data) fitted to the engine. After the road test, remove the spark plug, and observe the appearance of the plug as well as the surface of the piston crown. The color observed tells whether the mixture is too rich or too lean. When replacing the spark plug, consult the page 2-6.

MIXTURE ADJUSTMENT

- This adjustment is effected mainly by main jet and jet needle.

Before doing so, check to be sure that the float level is correctly set and that the overflow pipe, vacuum hose, inlet hose and air cleaner are in sound condition.

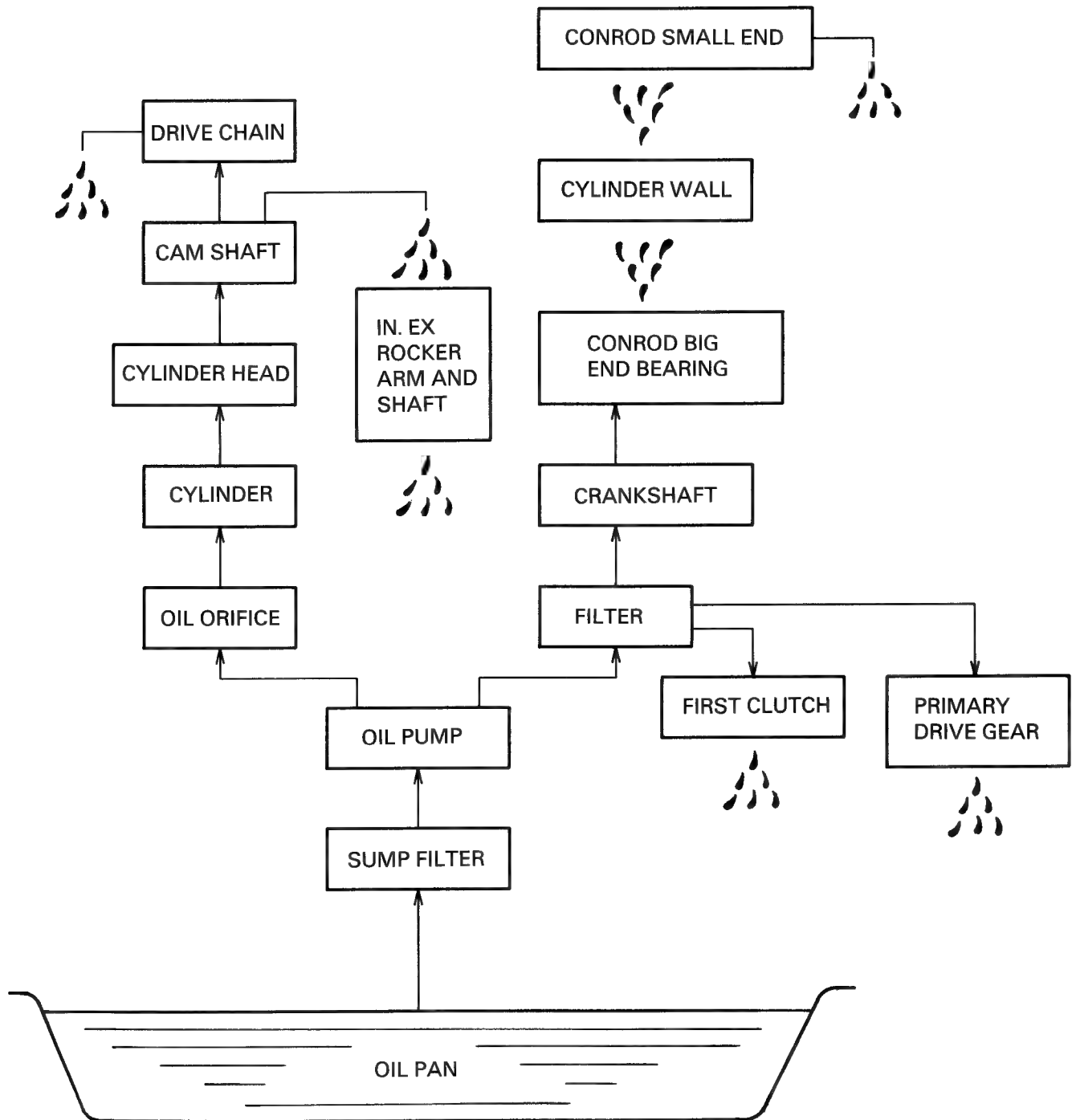
- Find out at which throttle position the engine lacks power or otherwise performs poorly. Drive the machine at the throttle position for a distance of about 10 km, after which the spark plug and piston crown should be inspected for color and appearance.
- The mixture can be made "richer" or "leaner" in three ways: namely, by altering main jet, jet needle and pilot jet. Effectiveness of these ways depends on the throttle position, as shown in this chart.

Throttle opening	1/4	1/2	3/4	Full
Main jet				
Jet needle				
Pilot jet				

NOTE:

If the machine is tested at 1/2 throttle resulting in a color and appearance indicating a mixture that is too rich or too lean, perform adjustment by means of jet needle.

LUBRICATION CHART



ELECTRICAL SYSTEM

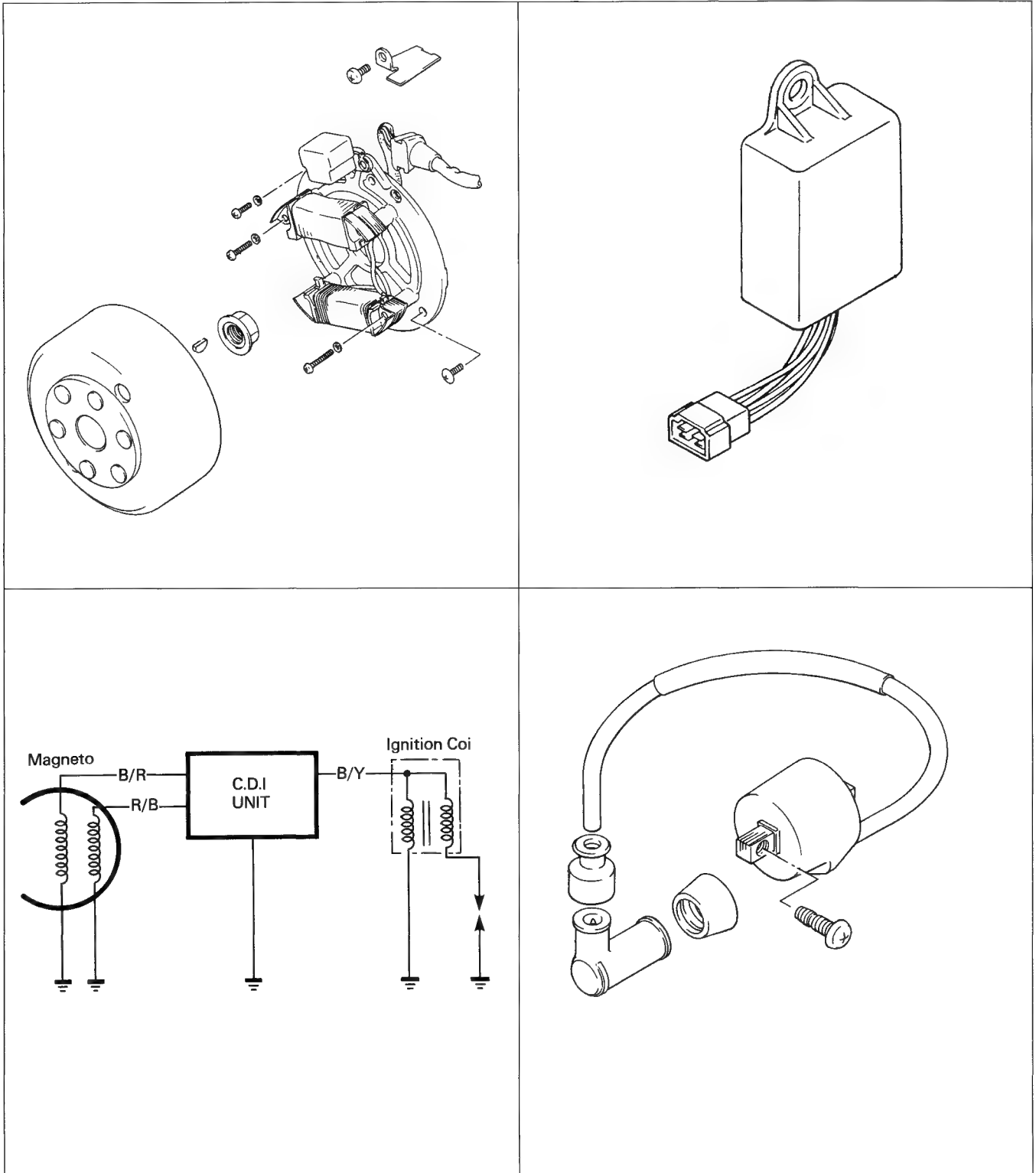
CONTENTS

<i>IGNITION SYSTEM.....</i>	<i>5-1</i>
<i>CHARGING AND LIGHTING SYSTEM.....</i>	<i>5-4</i>
<i>SPEEDOMETER.....</i>	<i>5-6</i>
<i>LIGHTS.....</i>	<i>5-7</i>
<i>SWITCH</i>	<i>5-8</i>
<i>BATTERY</i>	<i>5-10</i>

IGNITION SYSTEM

DESCRIPTION

In the capacitor discharged ignition system, the electrical energy generated by the magneto charges the capacitor. This energy is released in a single surge at the specified ignition timing point, and current flows through the primary side of the ignition coil. A high voltage current is induced in the secondary windings of the ignition coil resulting in strong spark between the spark plug gap.



INSPECTION

CDI UNIT

- Using the pocket tester (RX1k Ω range), measure the resistance between the lead wires in the following table.

Pocket tester	09900-25002
---------------	-------------

WIRE COLOR

R/B: Red with Black tracer
 B/R: Black with Red tracer
 B/Y: Black with Yellow tracer
 B/W: Black with White tracer

6V type

Unit: k Ω

Probe of tester to: ⊕	⊕ Probe of tester to:				
	R/B	B/R	B/Y	B/W	
	R/B	*ON	ON	OFF	
	B/R	ON	ON	ON	
	B/Y	OFF	OFF	OFF	
	B/W	ON	*ON	ON	

This chart presupposes that the "CDI" unit is in sound condition; "ON", "OFF" and each resistance in the boxes of the chart refer to what your pocket tester will indicate when its positive and negative pins are put to the indicated terminals of a good "CDI" unit.

- The pointer moves and then returns with the CON display.
- The pointer moves only slightly in the ON mode marked with an asterisk (*).

MAGNETO COIL

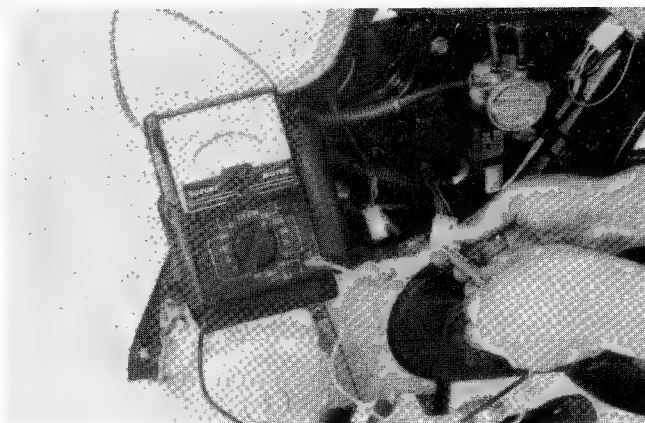
- Using the pocket tester (X100 Ω range), measure the resistance between the lead wires in the following table.

Pocket tester	09900-25002
---------------	-------------

Magneticoil resistance	
Pick up	R/B – B/W 80 – 120 Ω
Power source	B/R – B/W 90 – 140 Ω

WIRE COLOR

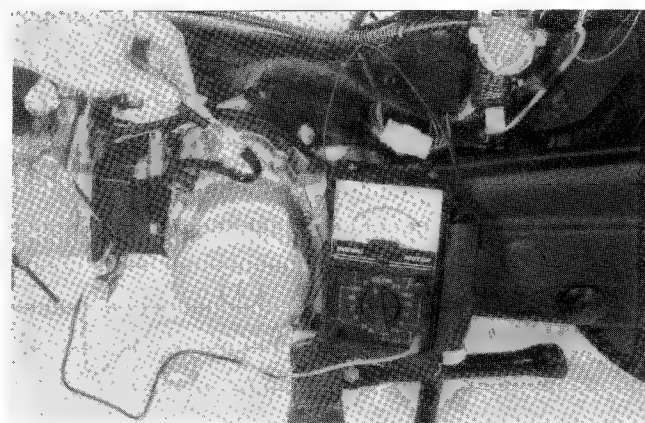
R/B: Red with Black tracer
 B/R: Black with Red tracer
 Y/W: Yellow with White tracer
 B/W: Black with White tracer



12V type

Unit: k Ω

Probe of tester to: ⊕	⊕ Probe of tester to:				
	R/B	B/R	B/Y	B/W	
	R/B	ON	ON	ON	
	B/R	ON	ON	ON	
	B/Y	CON	CON	CON	
	B/W	ON	ON	ON	



NOTE:

When mounting stator on the magneto cover, apply a small quantity of **THREAD LOCK "1342"** to the threaded parts of screws.

Thread Lock "1342"	99000-32050
--------------------	-------------

IGNITION COIL

Checking with electro tester.

- Test the ignition coil for sparking performance. Test connection is as indicated. Make sure that the three-needle sparking distance is at least 8 mm.

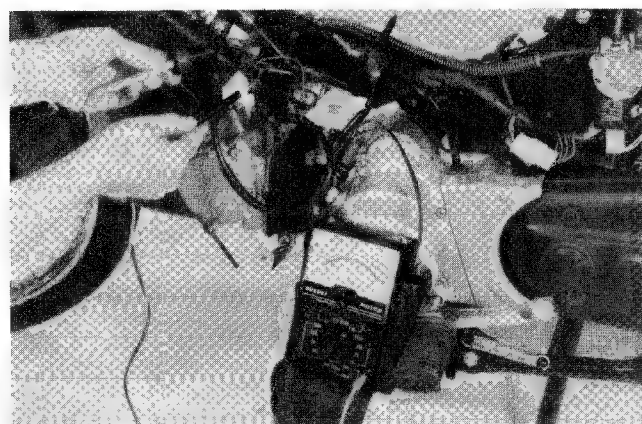
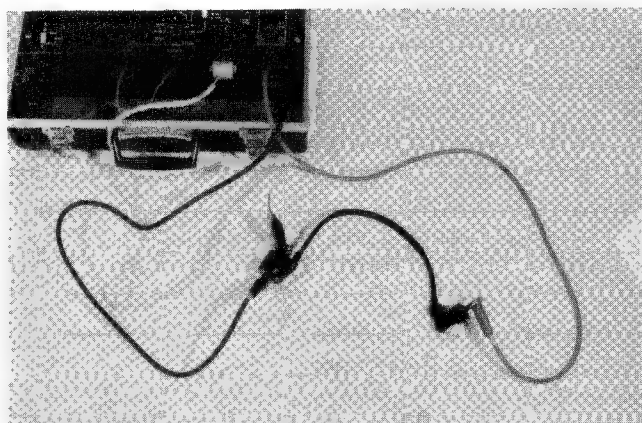
Electro tester	09900-28106
----------------	-------------

STD Spark performance	8mm
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Checking with pocket tester.

Pocket tester	09900-25002
---------------	-------------

Ignition coil resistance	
Primary	B/Y – Ground 0 – 1.0 Ω
Secondary	Plug cap – Ground 13 – 20 k Ω

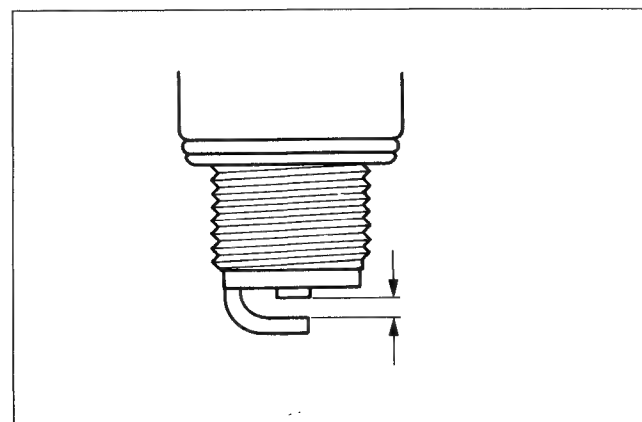
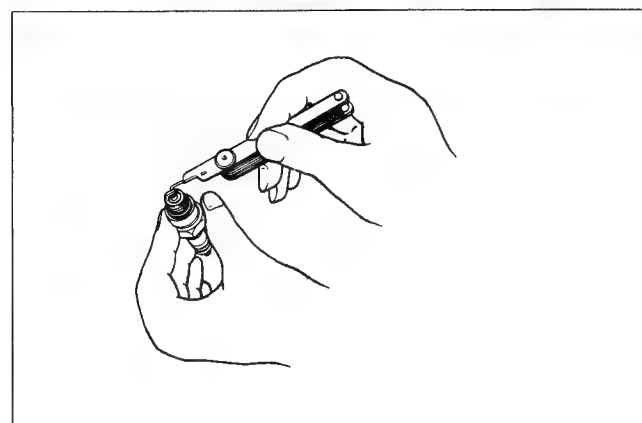


SPARK PLUG

Clean the plug with a wire brush and pin. Use the pin to remove carbon, taking care not to damage the porcelain.

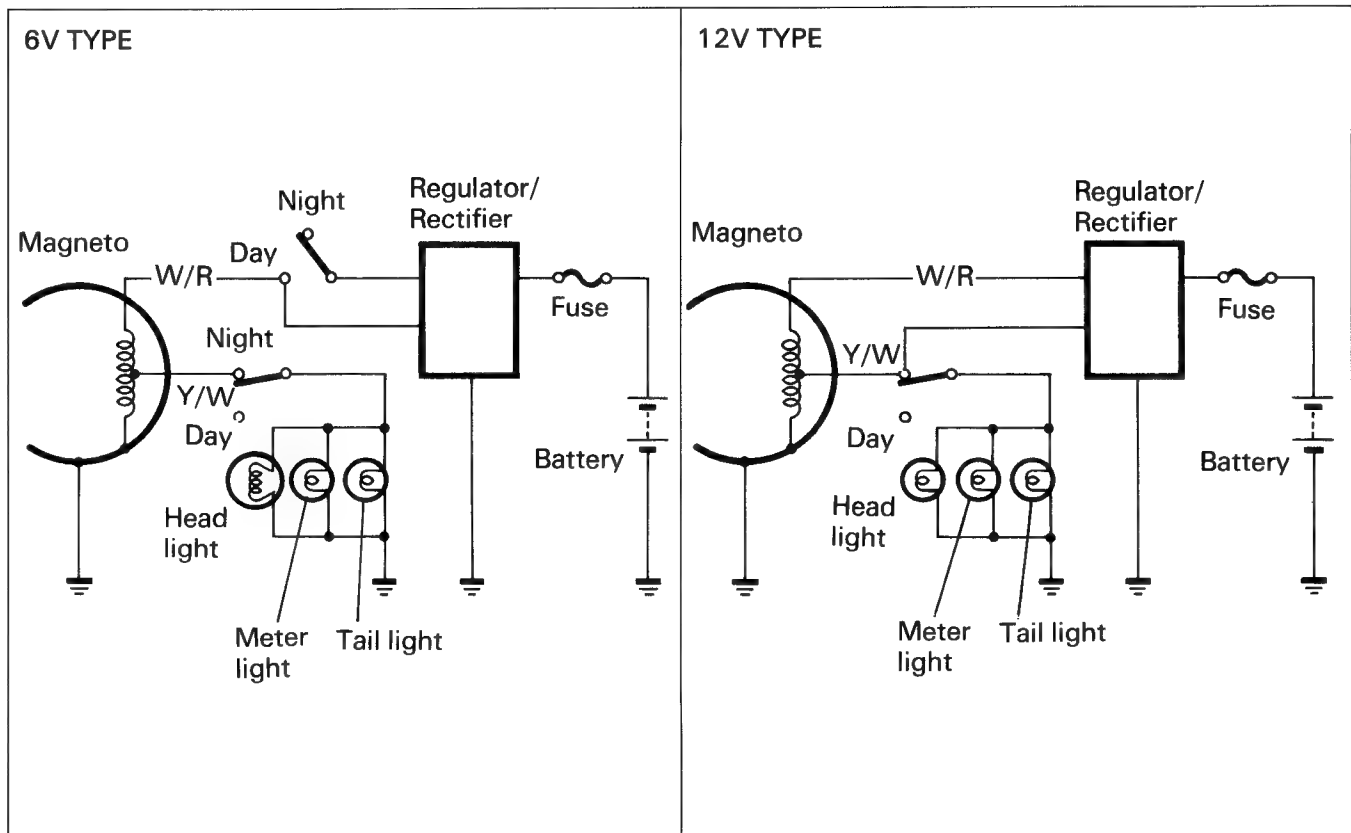
- Check the gap with a thickness gauge.

Spark plug gap	0.6 – 0.7 mm
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CHARGING AND LIGHTING SYSTEM

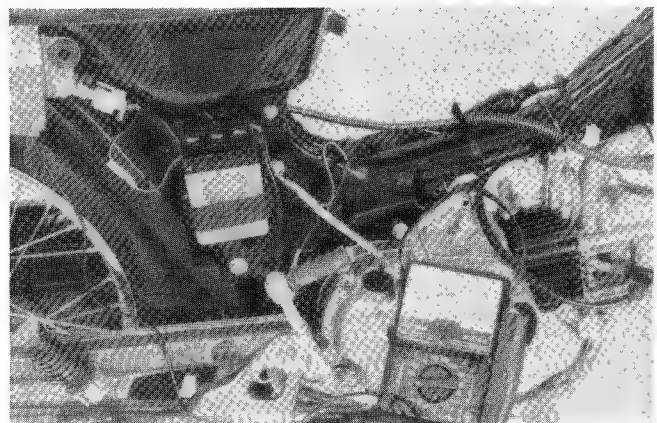
The charging system uses the flywheel magneto as shown in the figure. The charging and lighting coils are mounted on the magneto stator and generate AC as the flywheel rotor turns. The charging and lighting system incorporates two circuits, for charging and lighting. These circuits are engaged by setting the ignition key to the ON position. AC generated in the charging coil flows to the regulator/rectifier where it is changed to DC. This DC then charges the battery. On the other hand, lighting coil supplies AC current to the headlight, tail light, meter light and high beam indicator light.



INSPECTION

CHARGING OUTPUT CHECK

Start the engine and keep it running at 5000 r/min with the lighting switch turned ON (High position). Using the pocket tester, measure the DC voltage between the battery W/R terminal of regulator/rectifier and ground. If the tester reading is beyond the specification, charging/lighting coil and/or regulator/rectifier is defective. Replace the new regulator/rectifier and check again.



NOTE:

When making this test, be sure that the battery is in fully-charged condition.

STD charging output

6V type	9.0 – 11.0V (DC) at 5000 r/min
12V type	13.0 – 16.0V (DC) at 5000 r/min

09900-25002	Pocket tester
-------------	---------------

MAGNETO COIL

- Using the pocket tester (X1 Ω range), measure the resistance between the lead wires in the following table.

09900-25002	Pocket tester
-------------	---------------

Magneticoil resistance	
Lighting coil	Y/W – B/W 0 – 1 Ω
Charging coil	W/R – B/W 0 – 1 Ω

REGULATOR/RECTIFIER

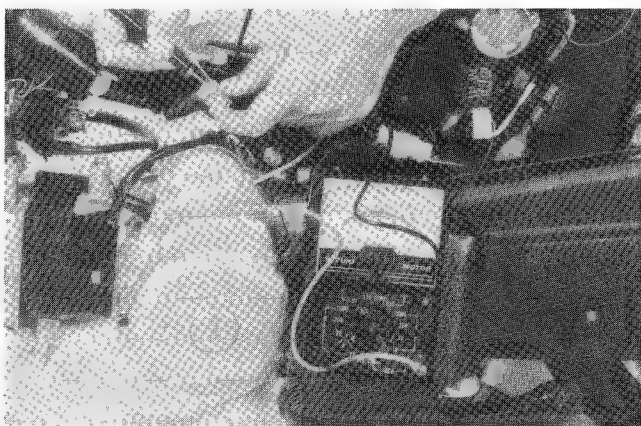
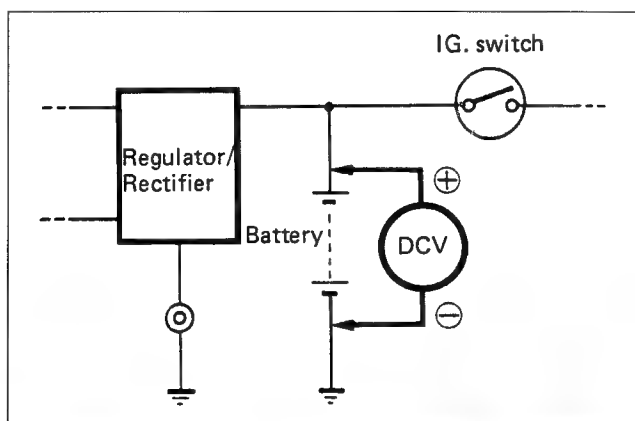
Using the pocket tester (X1k Ω range), measure the resistance between the terminals in the following table. If the resistance checked is incorrect, replace the regulator/rectifier.

09900-25002	Pocket tester
-------------	---------------

6V type

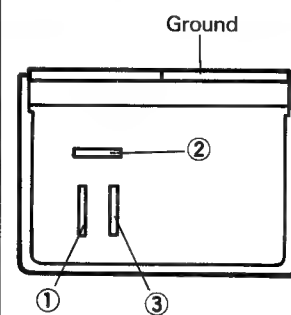
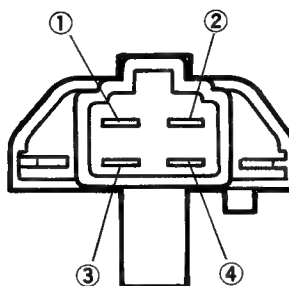
Unit: k Ω

⊕ Probe of tester to:	⊕ Probe of tester to:			
	①	②	③	Ground
①		ON	ON	OFF
②	ON		ON	OFF
③	OFF	OFF		OFF
⊖ Ground	OFF	OFF	OFF	



12V type

6V type

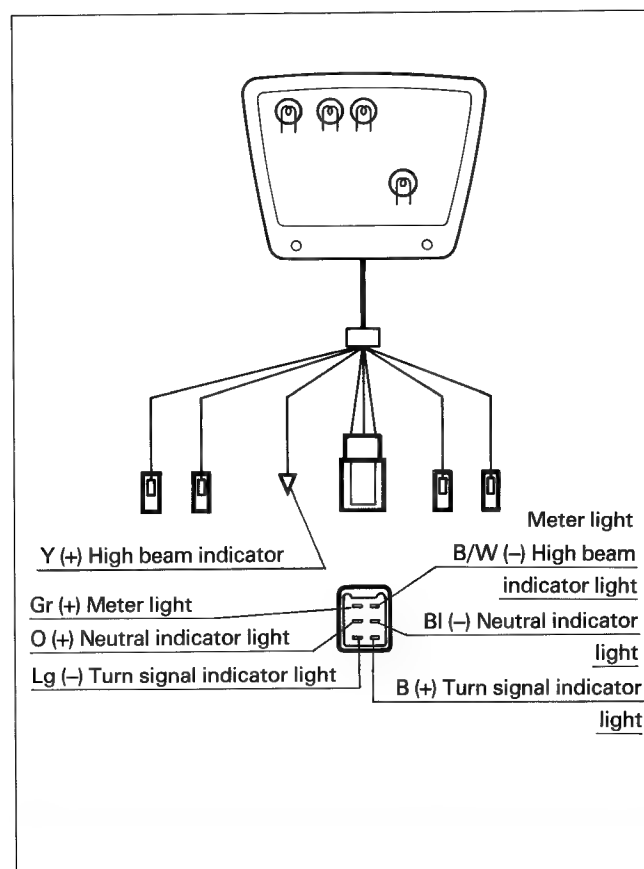
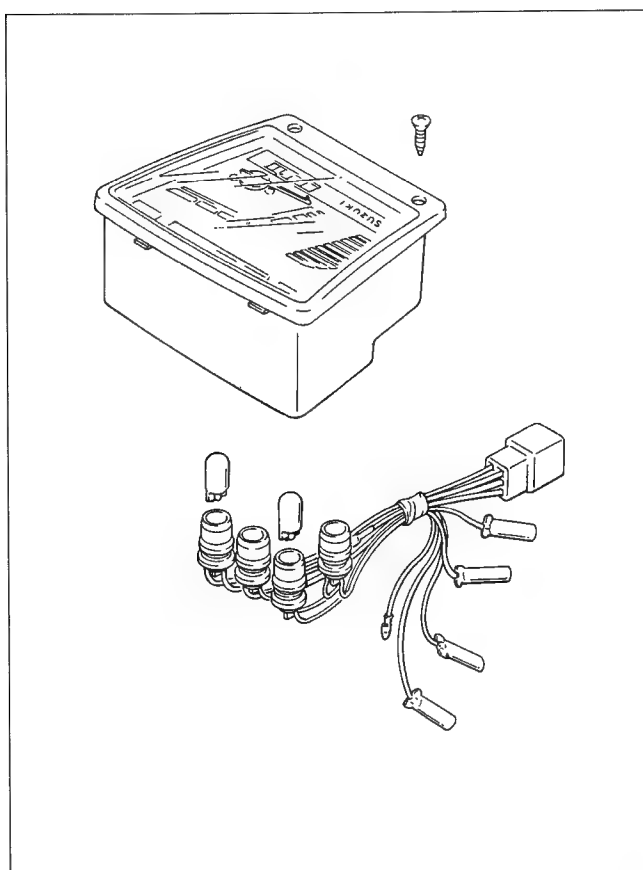


12V type

Unit: k Ω

⊕ Probe of tester to:	⊕ Probe of tester to:			
	①	②	③	④
①		OFF	ON	OFF
②	OFF		OFF	ON
③	OFF	OFF		OFF
④	OFF	OFF	OFF	

SPEEDOMETER



INSPECTION

Using the pocket tester, check the continuity between lead wires.

If the continuity measured is incorrect, replace the respective part.

09900-25002

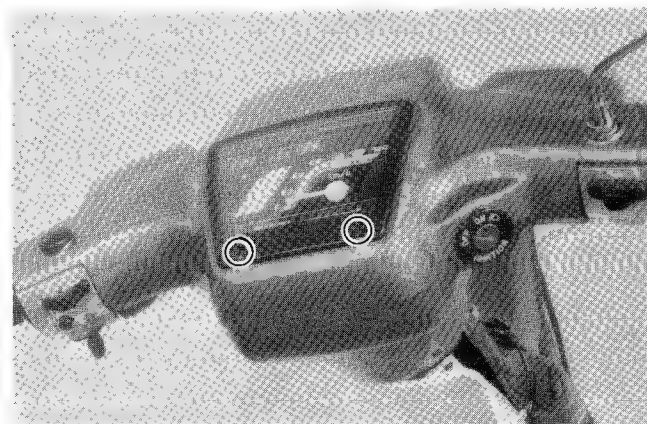
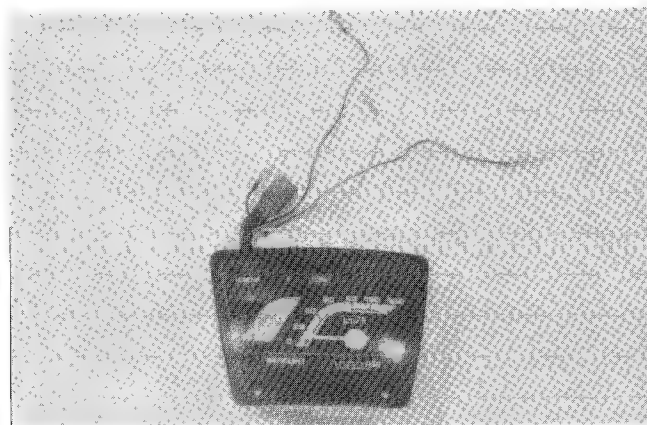
Pocket tester

NOTE:

When making this test, it is not necessary to remove the speedometer.

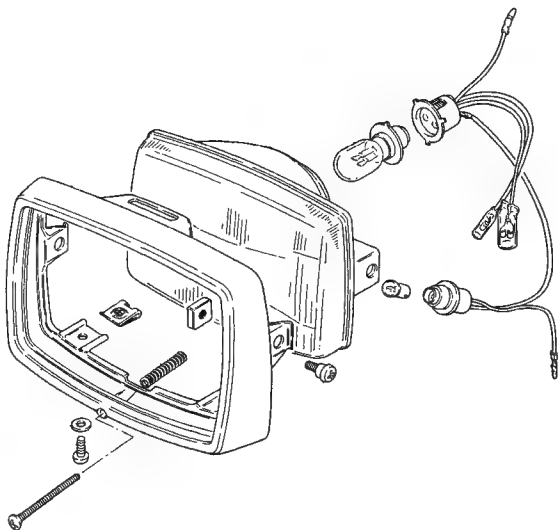
SPEEDOMETER BULB REPLACEMENT

- Remove the two screws and take up the speedometer.
- Replace the bulb.

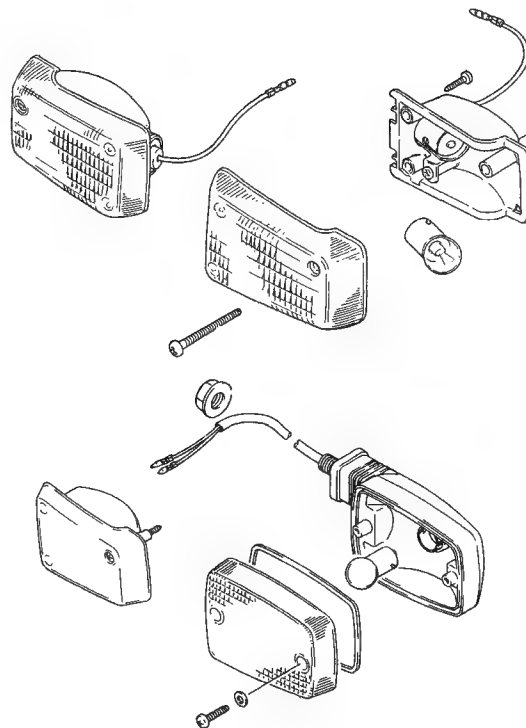


LIGHTS

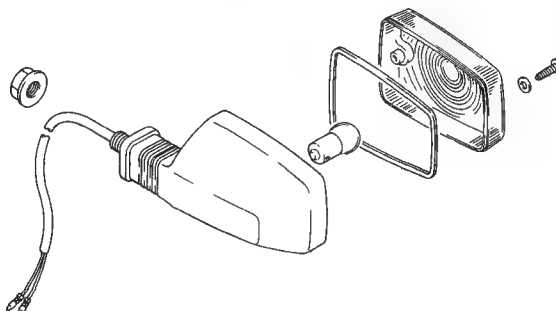
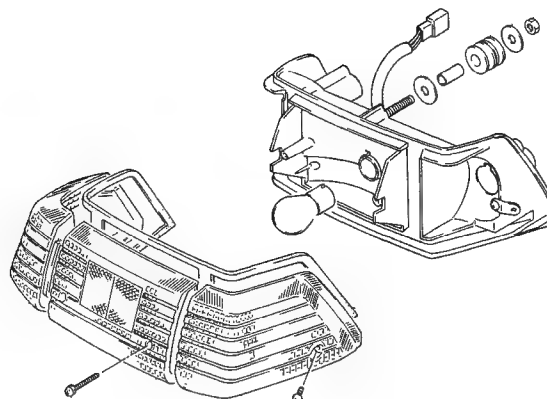
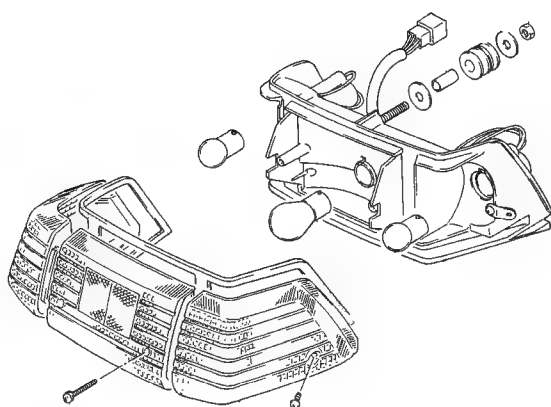
HEADLIGHT



FRONT TURN SIGNAL LIGHT



REAR COMBINATION LIGHT



SWITCHES

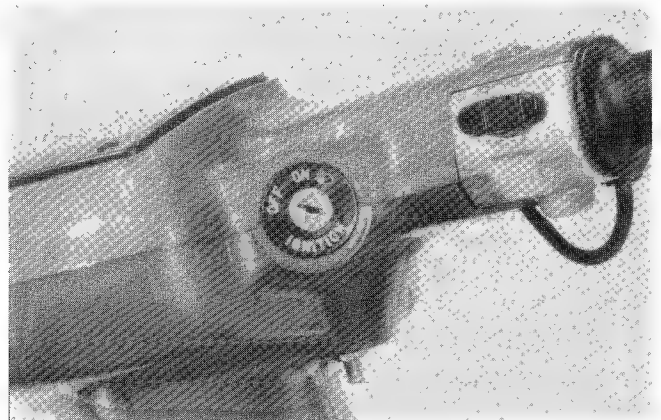
Inspect each switch for continuity with the pocket tester referring to the chart.

If any abnormality is found, replace the respective switch assembly with new one.

09900-25002	Pocket tester
-------------	---------------

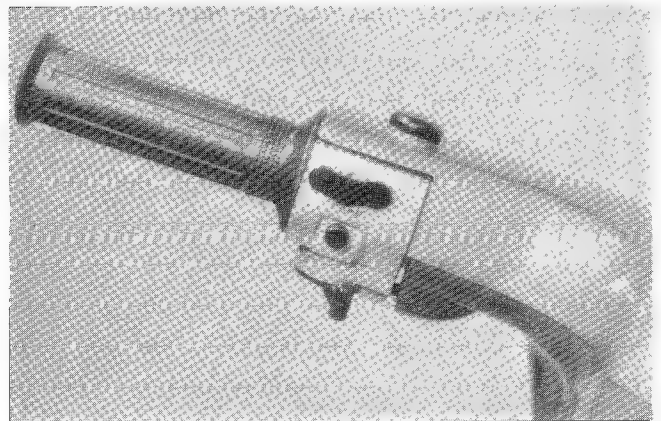
IGNITION SWITCH

	B/W	B/R	G	Y/W	O	R	Y/R	W/R
OFF	○—○							
ON					○—○		○—○	
.			○—○		○—○			



LIGHTING SWITCH






	Gr	Br	W	Y
S	○—○			
L	○—○		○	
H	○—○			○

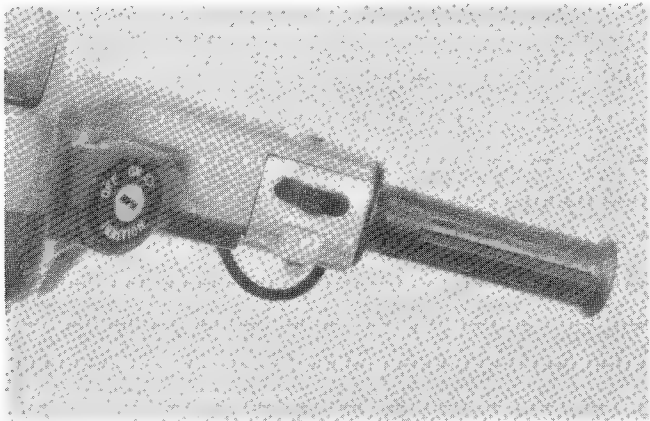


HORN SWITCH



	G	B/W
.		
PUSH	○—○	

TURN SIGNAL LIGHT SWITCH



	Lbl	B	Lg
R			
.			
L			

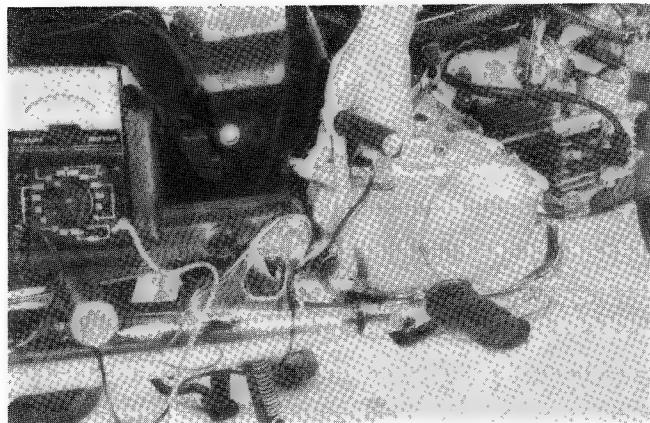


FRONT BRAKE LIGHT SWITCH



	O	W/B
.		
ON		

REAR BRAKE LIGHT SWITCH

	O	W/B
.		
ON		



NEUTRAL INDICATOR SWITCH

	BI	Ground
.		
ON		

BATTERY

SPECIFICATIONS

Item	6V type	12V type
Type designation	6N4-2A	YB5L-B
Capacity	14.4kC (4 Ah)/10 HR	18KC (5 Ah)/10 HR
Standard electrolyte S.G.	1.28 at 20°C	←

In fitting the battery to the motorcycle, connect the breather tube to the battery vent.

INITIAL CHARGING

FILLING ELECTROLYTE

Remove short sealed cap before filling electrolyte. Fill battery with electrolyte (dilute sulfuric acid solution with acid concentration of 35.0% by weight, having a specific gravity of 1.28 at 20°C up to indicated UPPER LEVEL. Filling electrolyte should be always cooled below 30°C before filling into battery. Leave battery standing for half an hour after filling. Add additional electrolyte if necessary. Charge battery with current as described in the tables shown below.

Maximum charging current	0.4/0.5 A (6V type/12V type)
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CHARGING TIME

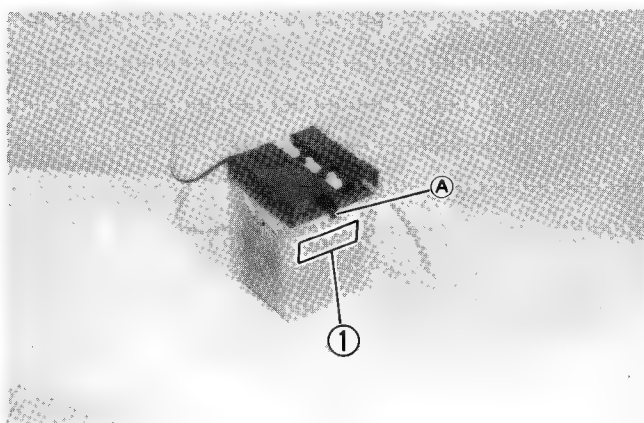
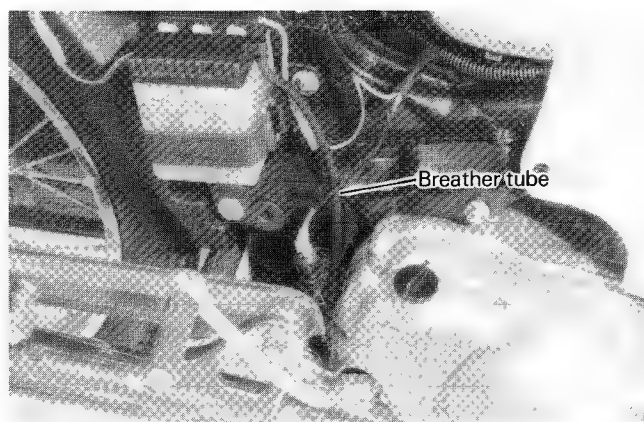
The charging time for a new battery is determined by the number of months that have elapsed since the date of manufacture.

Confirmation for date of manufacture:

Date of manufacture is indicated by a three-part number ①, as follows, each indicating month, data and year.

Near the end of charging period, adjust the specific gravity of electrolyte to value specified. After charging, adjust the electrolyte level to the UPPER LEVEL with DISTILLED WATER.

Months after manufacturing	Within 6	Within 9	Within 12	Over 12
Necessary charging hours	20	30	40	60



Ⓐ Sealed tube

SERVICING

Visually inspect the surface of the battery container. If any signs of cracking or electrolyte leakage from the sides of the battery have occurred, replace the battery with a new one.

If the battery terminals are found to be coated with rust or an acidic white powery substance, then this can be cleaned away with sandpaper.

Check the electrolyte level and add distilled water, as necessary, to raise the electrolyte to each cell's upper level.

Check the battery for proper charge by taking an electrolyte S.G. reading. If the reading is 1.22 or less, as corrected to 20°C, it means that the battery is still in a run-down condition and needs recharging.

NOTE:

First, remove the \ominus lead wire.

BASED ON S.G. READING RECHARGING OPERATION

To correct an S.G. reading 20°C, use following table.

To read the S.G. on the hydrometer ①, bring the electrolyte in the hydrometer to eye level and read the graduations on the float scale bordering on the meniscus (curved-up portion of electrolyte surface), as shown in figure.

Check the reading (as corrected to 20°C) with chart to determine the recharging time in hours by constant-current charging at a charging rate of 0.4 amperes (which is a tenth of the capacity of the present battery).

Be careful not to permit the electrolyte temperature to exceed 45°C, at any time, during the recharging operation. Interrupt the operation, as necessary, to let the electrolyte cool down. Recharge the battery to the specification.

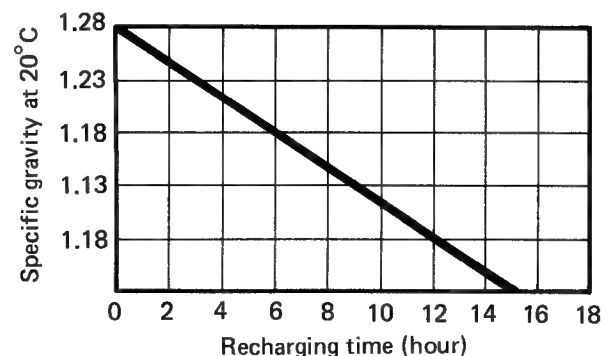
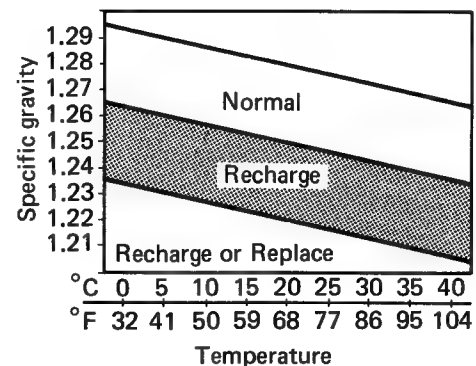
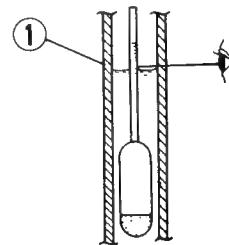
Electrolyte specific gravity	1.28 at 20°C
------------------------------	--------------

CAUTION:

Constant-voltage charging, otherwise called "quick" charging, is not recommendable for it could shorten the life of the battery.

09900-28403

Hydrometer



SERVICE LIFE

Lead oxide is applied to the pole plate of the battery which will come off gradually during the service. When the bottom of the battery case becomes full of the sediment, the battery cannot be used any more. If the battery is not charged for a long time, lead sulfate is generated on the surface of the pole plate and will deteriorate the performance (sulfation). Replace the battery with new one in such a case.

STORING

When a battery is left for a long term without using, it is apt to subject to sulfation. When the motorcycle is not used for more than 1 month (especially during the winter season), recharge the battery once a month at least.

WARNING:

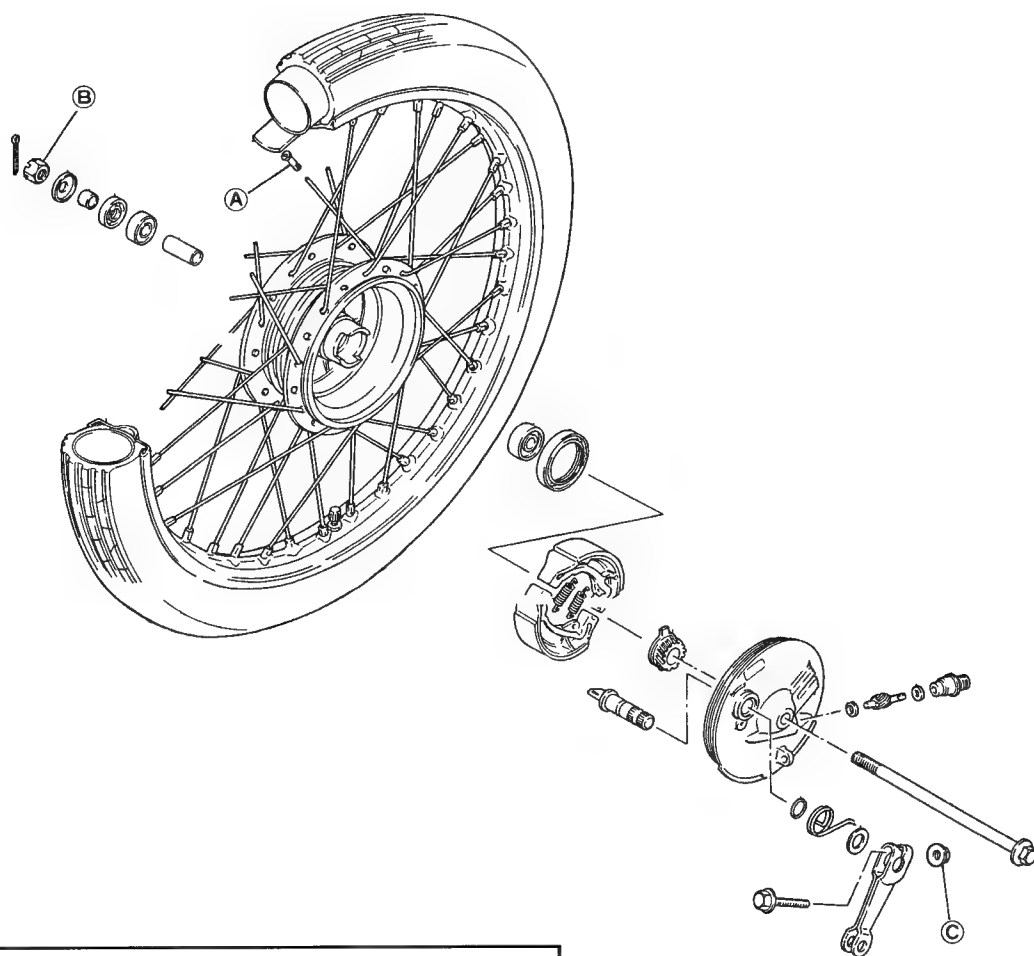
- * Before charging a battery, remove the seal cap from each cell.
- * Keep fire and sparks away from a battery being charged.
- * When removing a battery from the motorcycle, be sure to remove the \ominus terminal first.

CHASSIS

CONTENTS

FRONT WHEEL AND BRAKE.....	6-1
FRONT SUSPENSION	6-7
STEERING	6-9
REAR WHEEL, SPROCKET AND REAR BRAKE.....	6-15
REAR SWING ARM.....	6-20

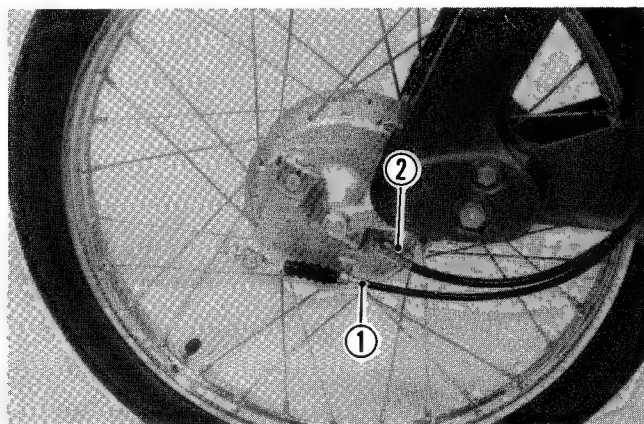
FRONT WHEEL AND BRAKE



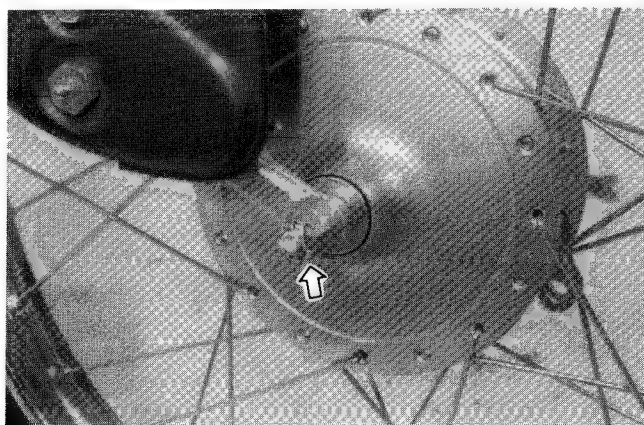
Tightening torque		
Item	N·m	kg-m
(A)	2.5 – 3	0.25 – 0.3
(B)	27 – 43	2.7 – 4.3
(C)	5 – 8	0.5 – 0.8

REMOVAL

- Support the motorcycle by the center stand and a jack or block on the level ground.
- Remove the front brake adjuster nut and disconnect the brake cable ①.
- Remove the speedometer cable ②.



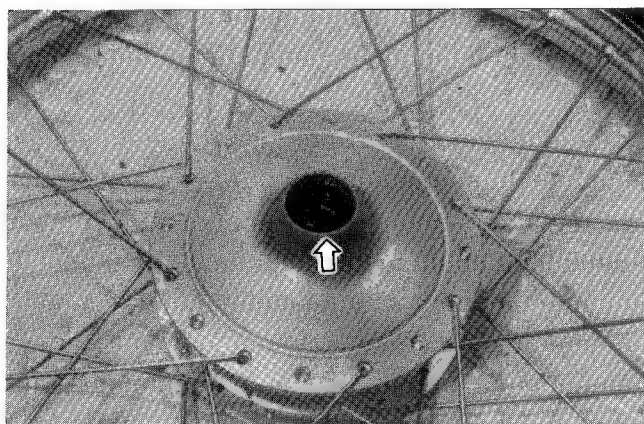
- Pull out the cotter pin and remove the axle nut.
- Draw out the axle shaft and remove the front wheel assembly.



DISASSEMBLY

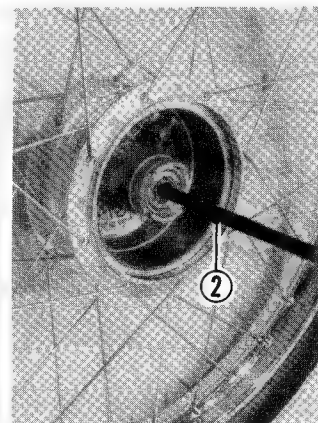
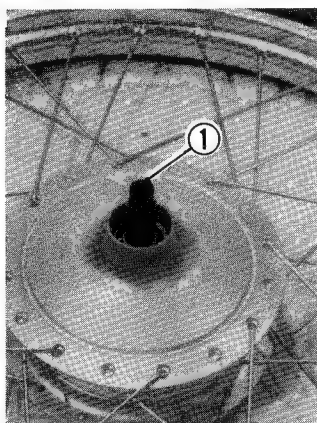
- Take off the brake panel.
- Draw out the spacer from the wheel.
- Remove the oil seal by using the special tool.

09913-50121	Oil seal remover
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Drive out the wheel bearings right and left by using the special tool as following steps.

- Insert the adapter ① into the wheel bearing.
- After insert the wedge bar ② from the opposite wheel bearing, lock the wedge bar about the adapter.

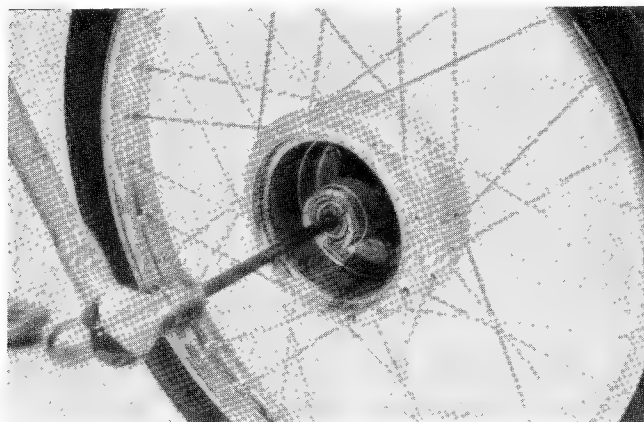


- Remove the wheel bearing by knocking the wedge bar.

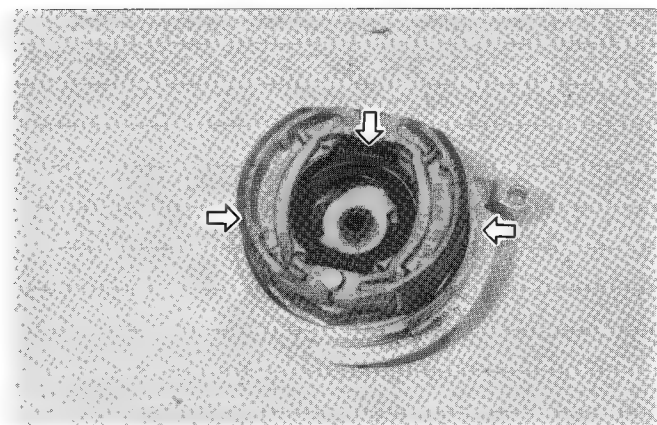
CAUTION:

The removed bearing should be replaced.

09941-50110	Bearing remover
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- Take off the brake shoes.
- Remove the oil seal.



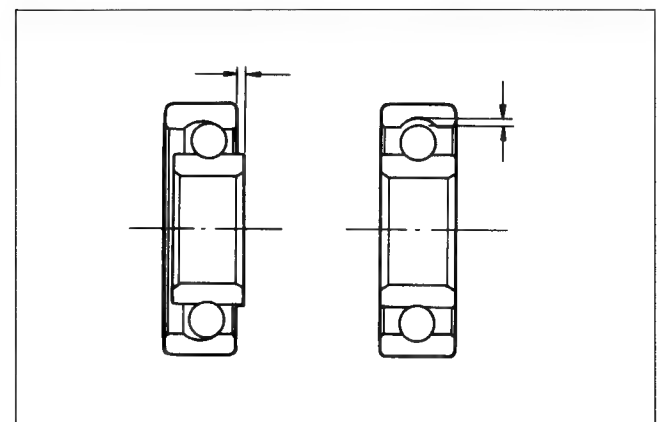
INSPECTION

WHEEL BEARINGS

Inspect the play of bearing inner race by hand while fixing it in the wheel.

Rotate the inner race by hand to inspect an abnormal noise occurs or rotating smoothly.

Replace the bearing if there is anything unusual.

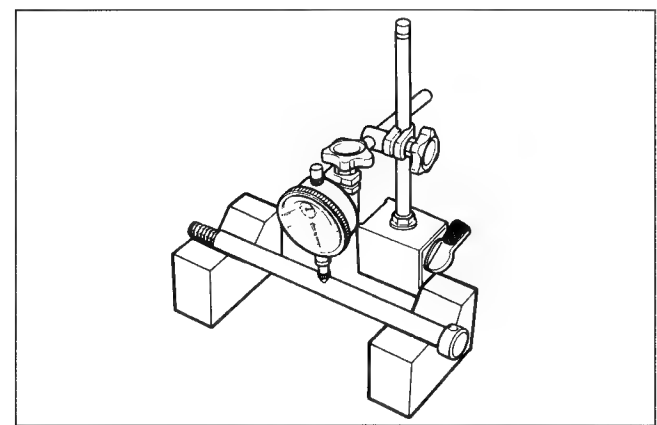


AXLE SHAFT

Using a dial gauge, check the axle shaft for runout and replace it if the runout exceeds the limit.

09900-20606	Dial gauge (1/100)
09900-20701	Magnetic stand
09900-21303	"V" block (75 mm)

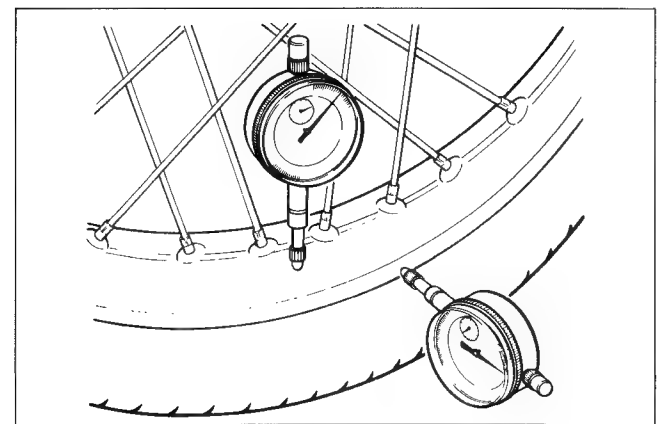
Service Limit	0.25 mm
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WHEEL RIM

Make sure that the wheel rim runout checked as shown, does not exceed the service limit. Adjust the tension of the spokes and, if this proves to be of effect, replace the rim.

Service Limit (Axial and Radial)	2.0 mm
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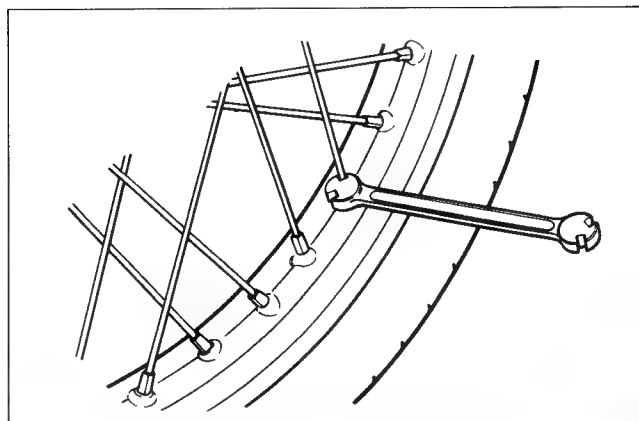
SPOKE

Check to be sure that all nipples are tight, and re-tighten them as necessary using the special tool. Loose spoke nipples are likely to result in spoke damage or in rim distortion.

09940-60113

Spoke nipple wrench

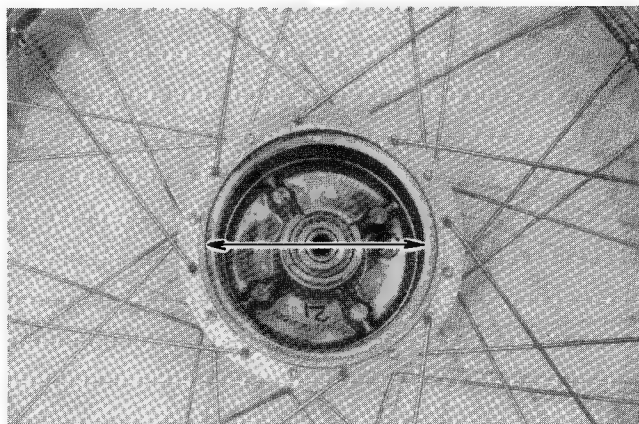
Tightening torque

2.5 – 3.0 N.m
(0.25 – 0.30 kg-m)**BRAKE DRUM**

Measure the brake drum I.D. to determine the extent of wear and, if the limit is exceeded by the wear noted, replace the drum. The value of this limit is indicated inside the drum.

Service Limit

110.7 mm

**BRAKE SHOE**

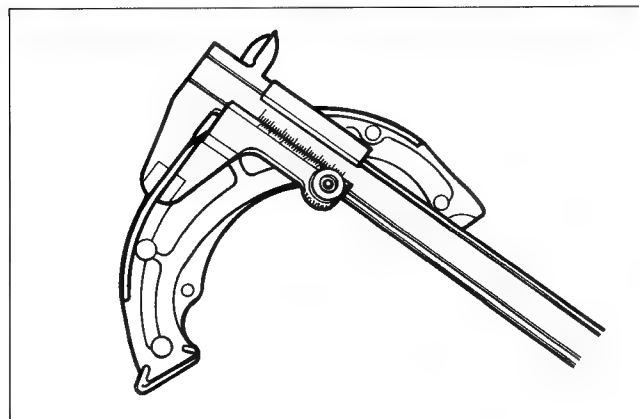
Check the brake shoe and decide whether it should be replaced or not from the thickness of the brake shoe lining.

Service Limit

1.5 mm

NOTE:

Replace the brake shoe with a set, otherwise braking performance will be adversely affected.

**TIRE**

Refer to page 2-13.

REASSEMBLY AND REMOUNTING

Reassemble and remount the front wheel and brake in the reverse order of disassembly and removal, and also carry out the following steps:

WHEEL BEARINGS

- Apply grease to wheel bearing, speedometer drive and driven gear and brake cam shaft.

99000-25010	SUZUKI Super Grease "A"
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WARNING:
Be careful not to apply too much grease to the brake camshaft. If grease gets on the linings, brake slippage will result.

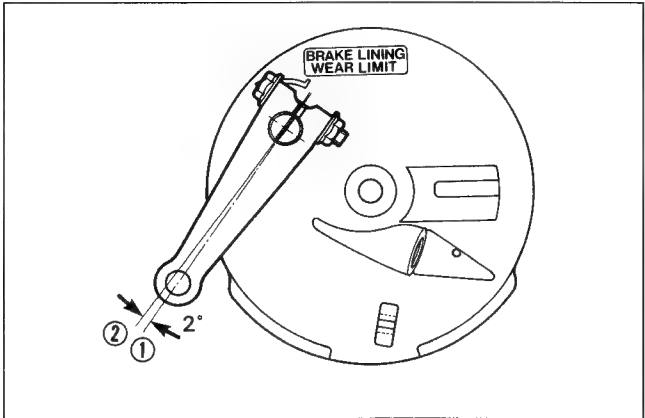
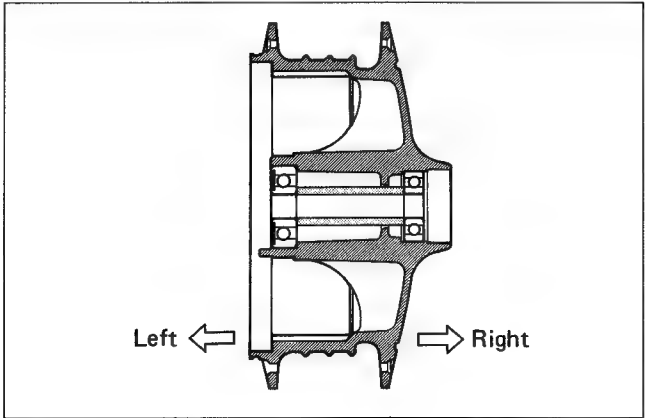
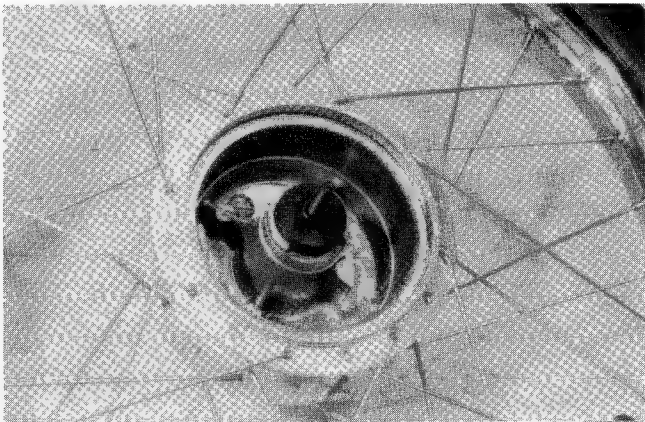
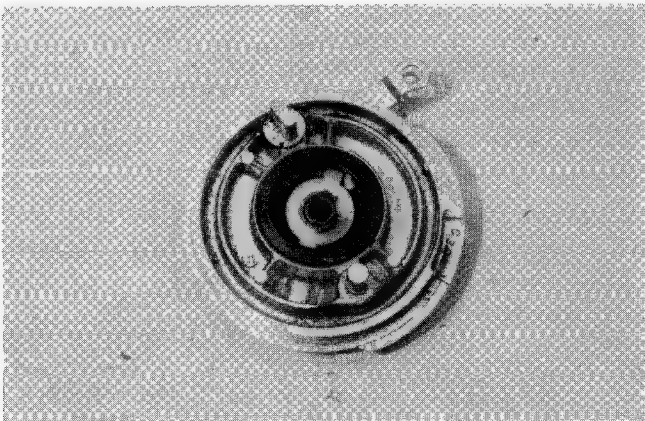
- Install the wheel bearings by using the special tools.

NOTE:
First install the wheel bearing for left side.

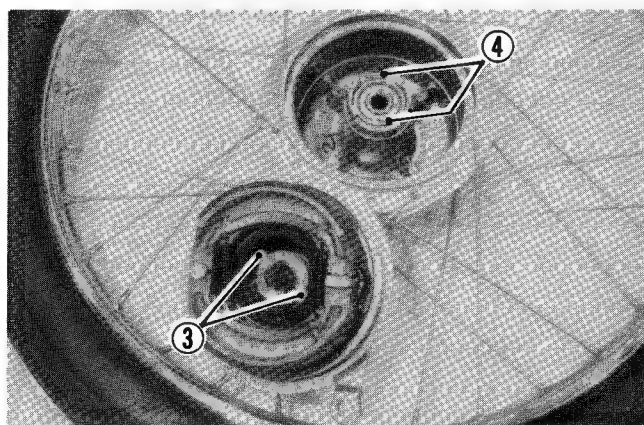
09924-84520	Bearing installer
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- When installing cam lever, align the cam lever centerline ① with indicator ② on the brake lining plate as shown in illustration.
- Tighten the cam lever nut to the specification.

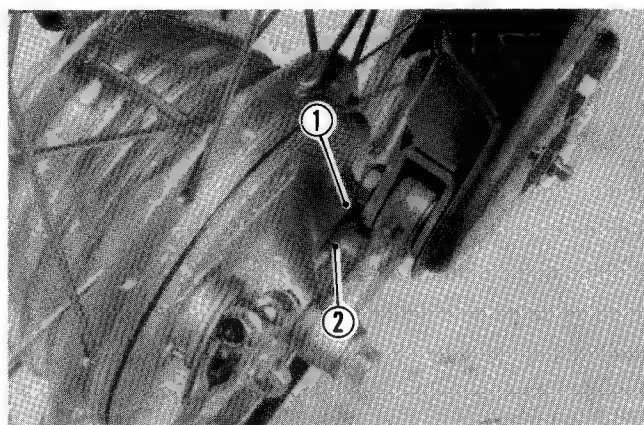
Tightening torque	5 – 8 N·m (0.5 – 0.8 kg-m)
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- When installing the brake panel, align the two drive pawls ③ and hub groove ④.

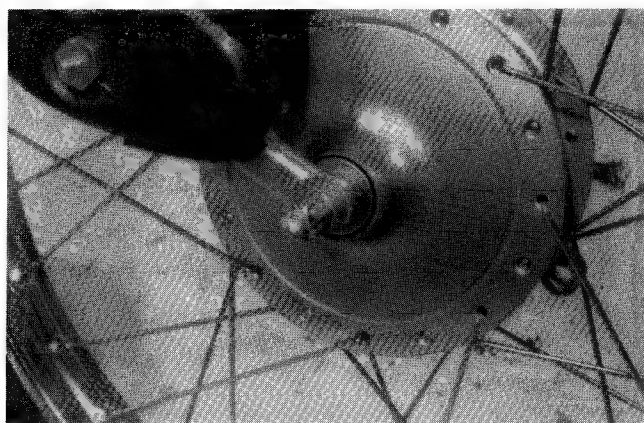


- Align the anchor slot ① of brake panel with stub ② of rocker arm.

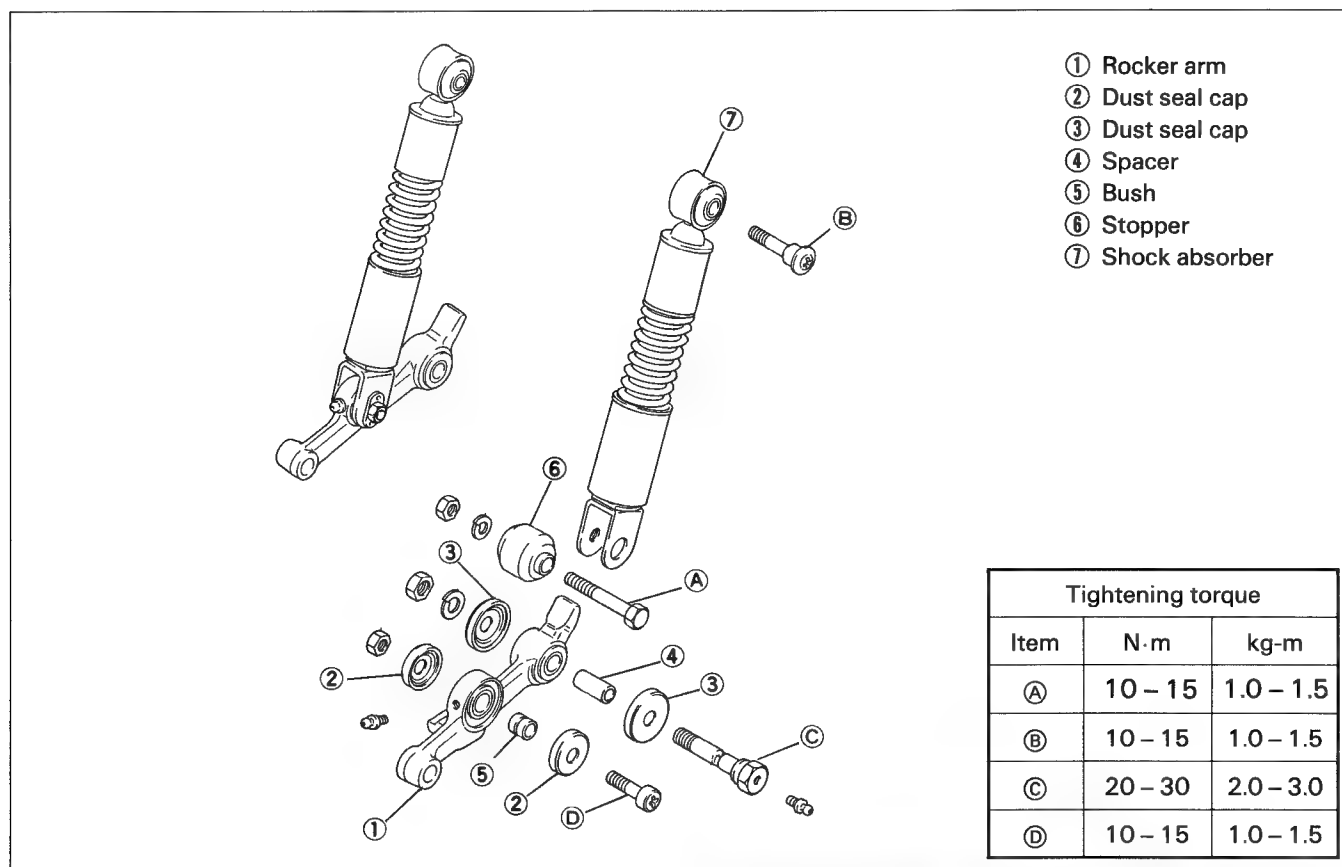


- Tighten the front axle nut to the specification.

Tightening torque	27 – 43 N·m (2.7 – 4.3 kg-m)
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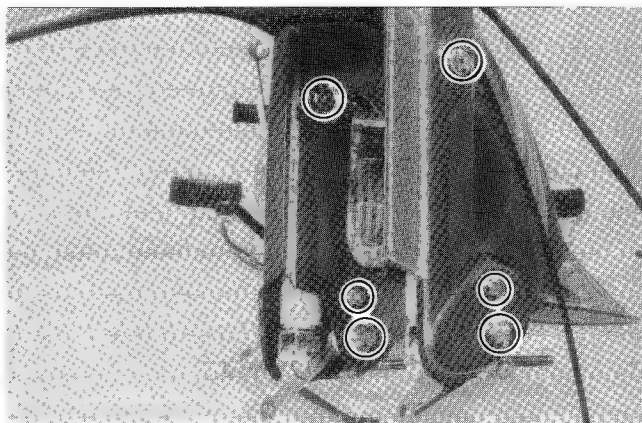


FRONT SUSPENSION



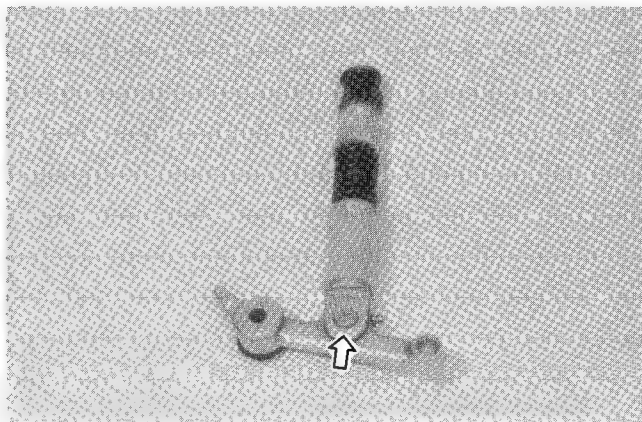
REMOVAL

- Remove the front wheel (see page 6-2).
- Remove two bolts and take off rocker arm with shock absorber.
- Remove bolt and stopper rubber.



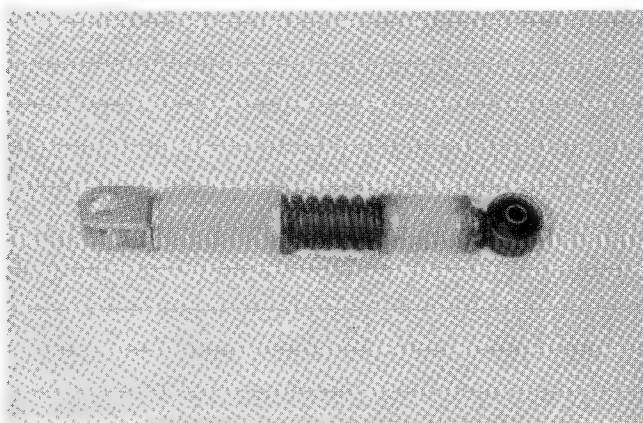
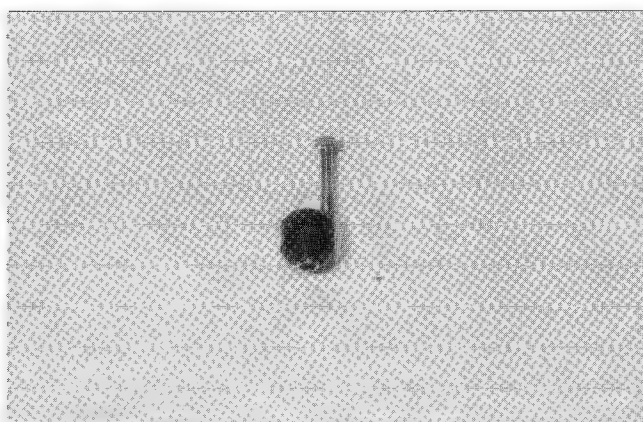
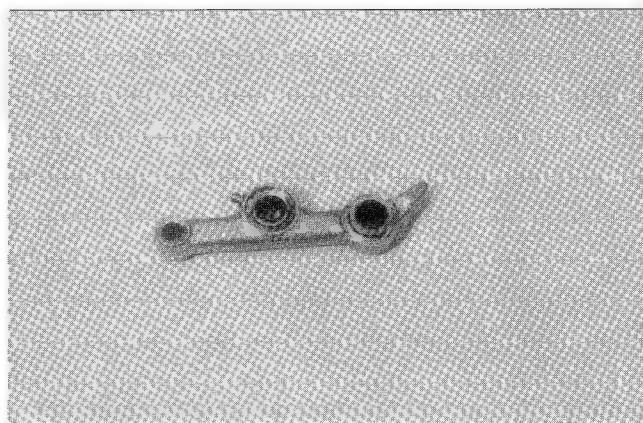
DISASSEMBLY

- Loosen the screw and separate the shock absorber and rocker arm.



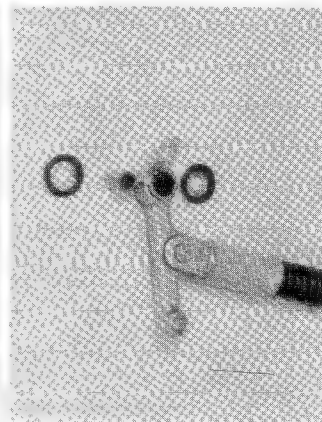
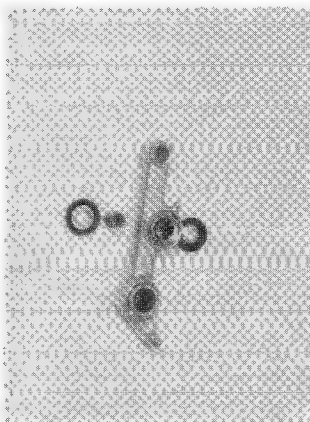
INSPECTION

- Check the bush for wear or damage.
- Check the rubber for cracks or damage.
- Check the shock absorber for oil leakage.

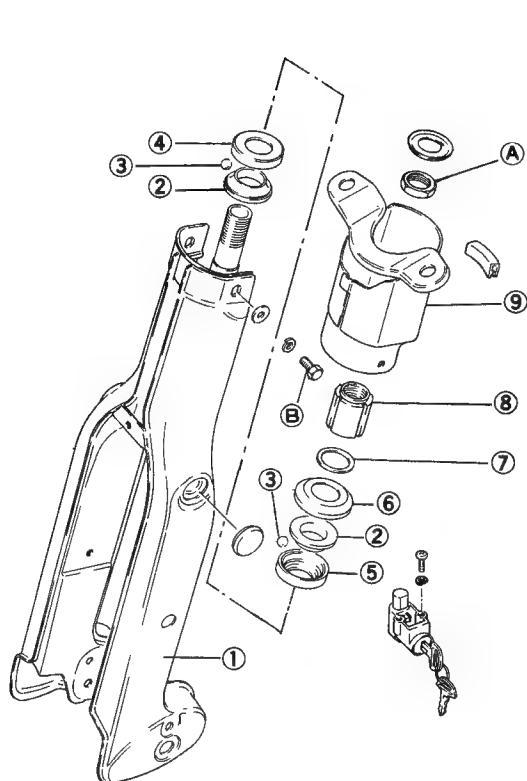


REASSEMBLY

Apply grease to the bush of rocker arm and shock absorber.



STEERING

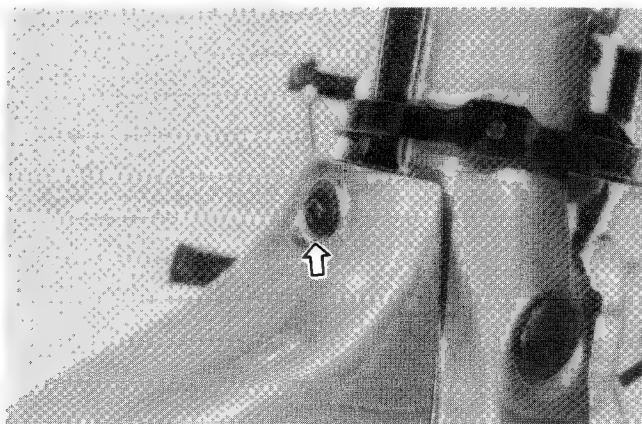
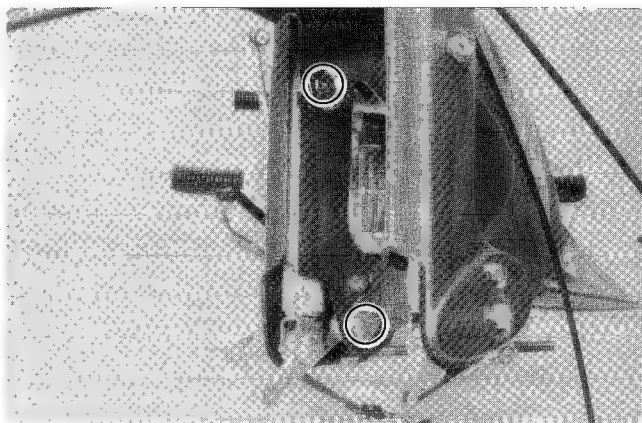


- ① Front fork body
- ② Outer race
- ③ Steel ball
- ④ Inner race
- ⑤ Outer race
- ⑥ Dust seal
- ⑦ Washer
- ⑧ Steering stem nut
- ⑨ Fork upper bracket nut

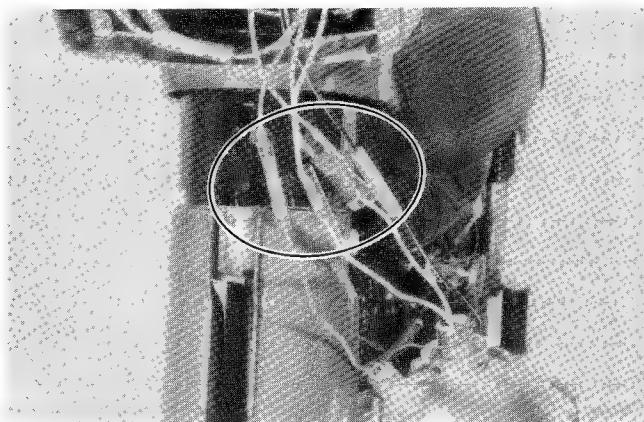
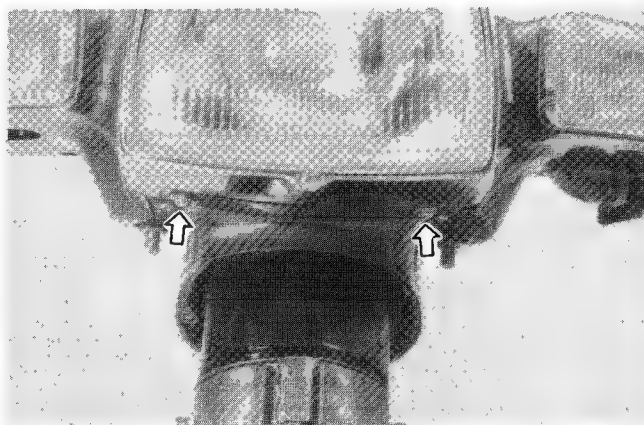
Tightening torque		
Item	N·m	kg-m
Ⓐ	60 – 100	6.0 – 10.0
Ⓑ	15 – 25	1.5 – 2.5

DISASSEMBLY

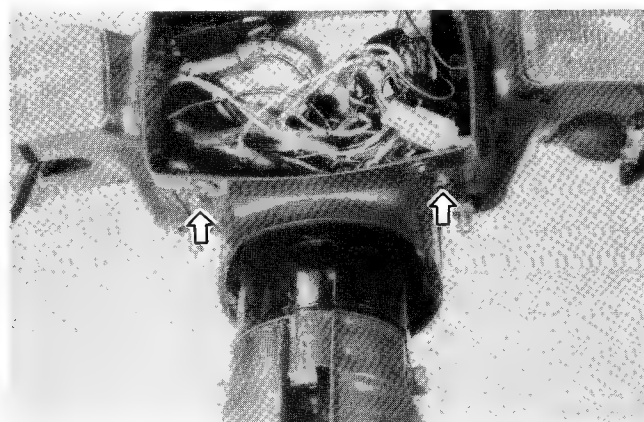
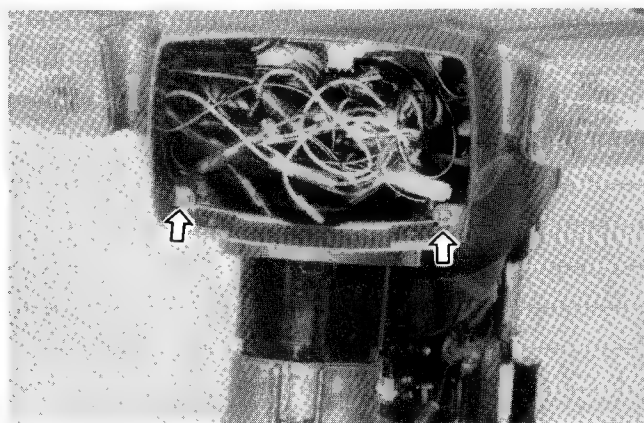
- Remove leg shield (refer to page 3-2).
- Remove the front wheel (refer to page 6-1).
- Remove the front fender.



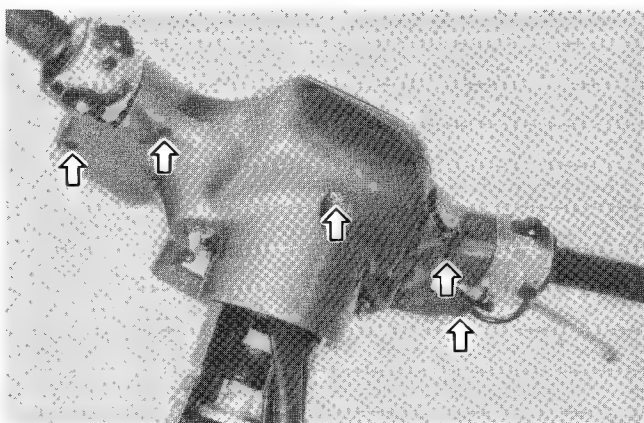
- Remove the headlight and disconnect the head light lead wire.



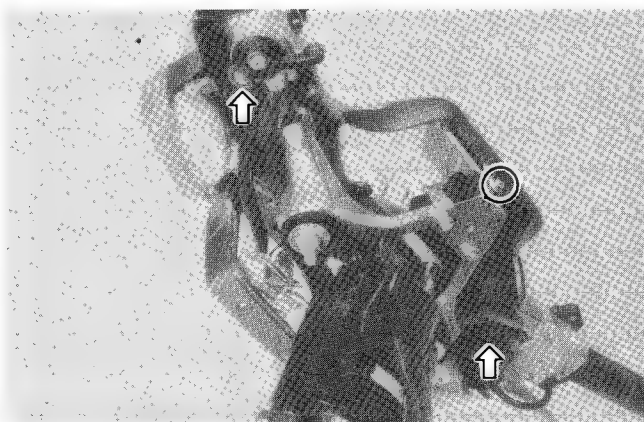
- Remove the headlight lower cover.



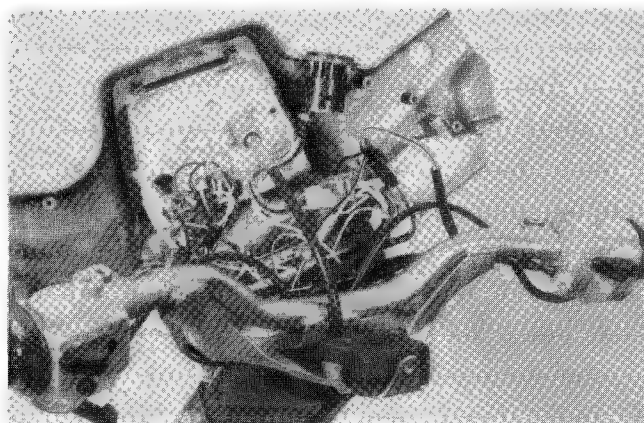
- Remove the handlebar lower cover.



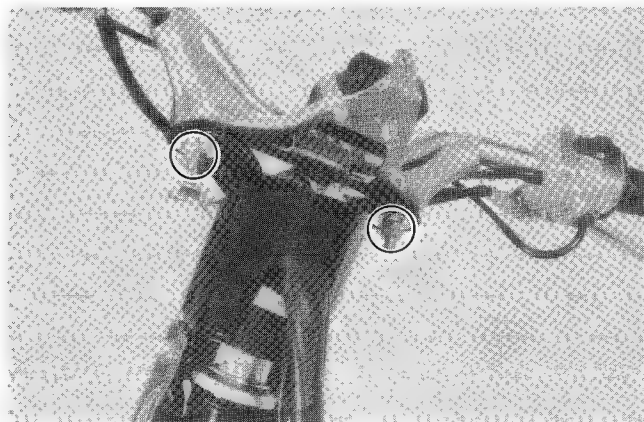
- Remove the handlebar upper cover.



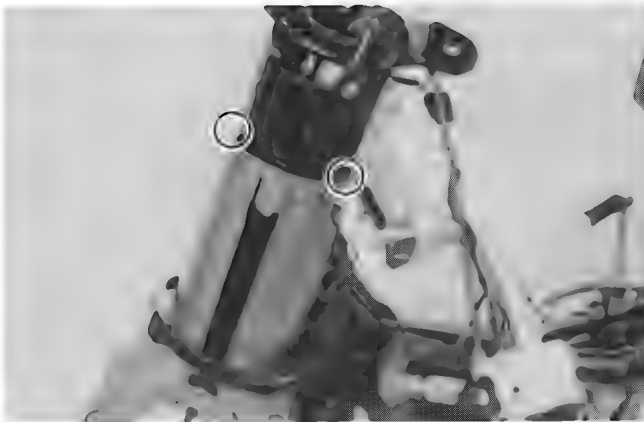
- Disconnect the speedometer cable and lead wire.



- Remove the handlebar.



- Flatten the lock washer and loosen the fork upper bracket nut.
- Loosen the handlebar holder mounting bolts and remove the handlebar holder.



- Loosen the steering stem nut by using the special tool.

09910-60611

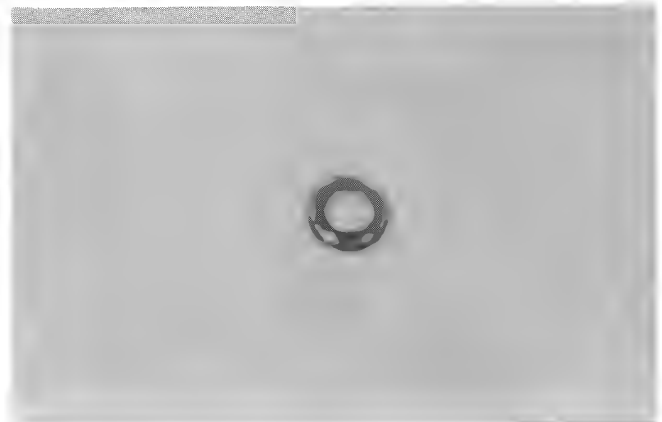
Universal clamp wrench



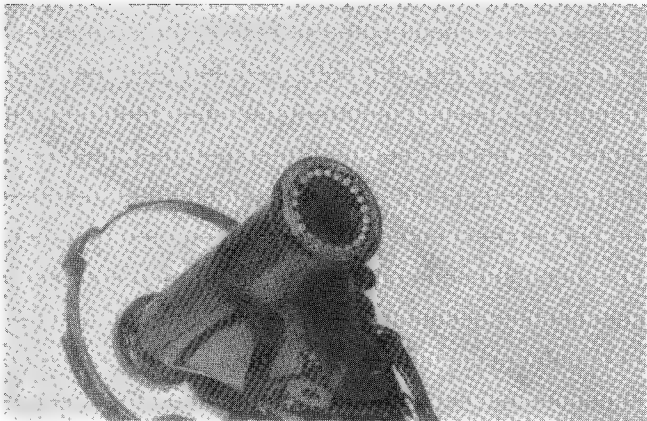
INSPECTION

Inspect and check the removed parts for following abnormalities.

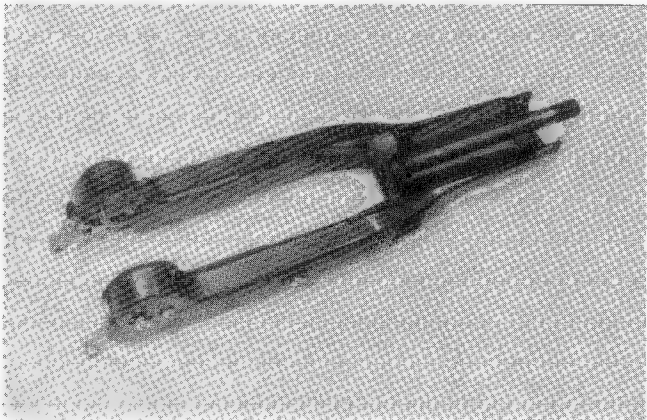
- Race wear and brinelling.



- Worn or damaged steel balls.

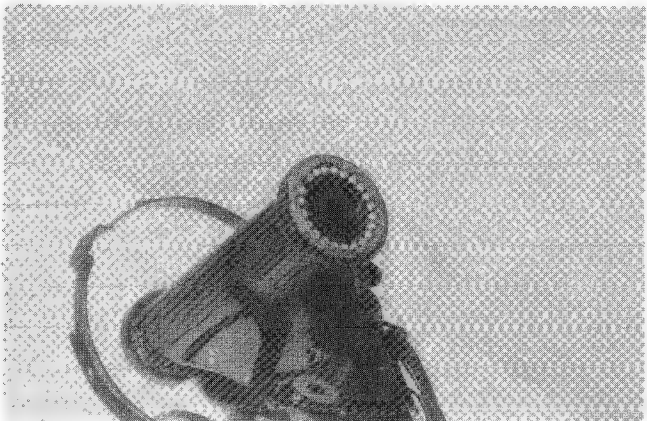


- Distortion of front fork body.



- Number of steel balls.

Upper	22 pcs
Lower	22 pcs



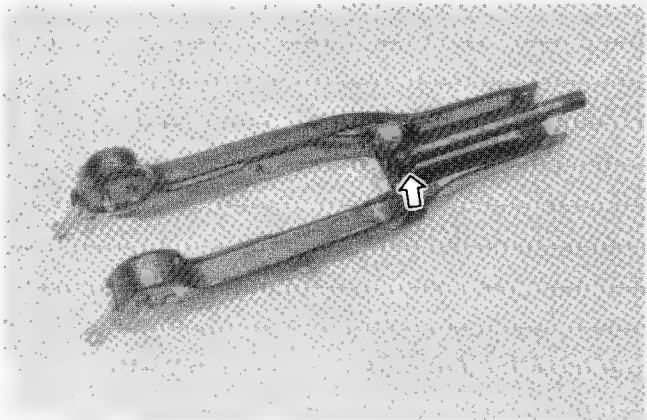
REASSEMBLY

- Fitting the inner race to the steering stem lower bracket.

09941-74910	Steering bearing installer
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- Apply grease to bearings.

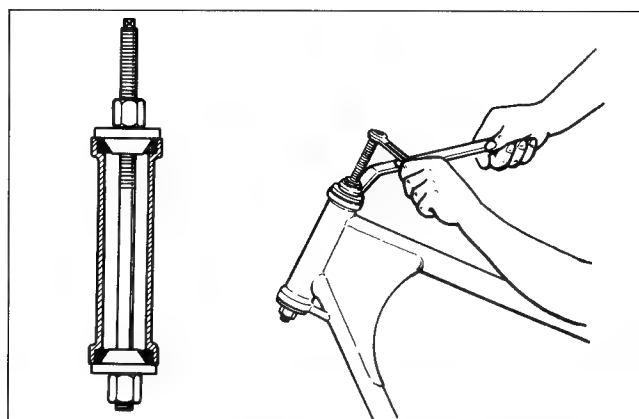
99000-25010	Suzuki super grease "A"
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- Oil the replacement inner races and force each inner race into the head pipe using the special tool. Be sure to push the race all the way into the pipe, that is, until the jacking bolt of the special tool refuses to turn any further.

09941-34513

Steering race installer



STEERING STEM NUT

Tighten the steering stem nut by using the special tool until resistance is felt, then loosen it 1/8 – 1/4 turn.

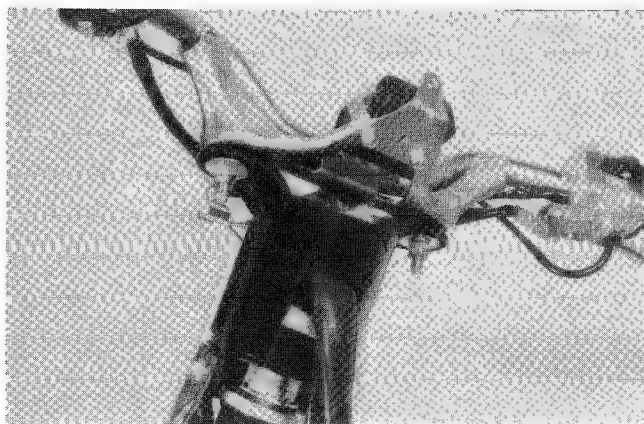
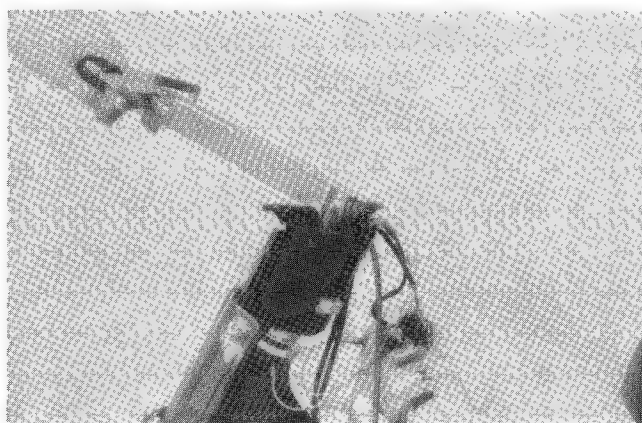
NOTE:

This adjustment will vary from motorcycle to motorcycle.

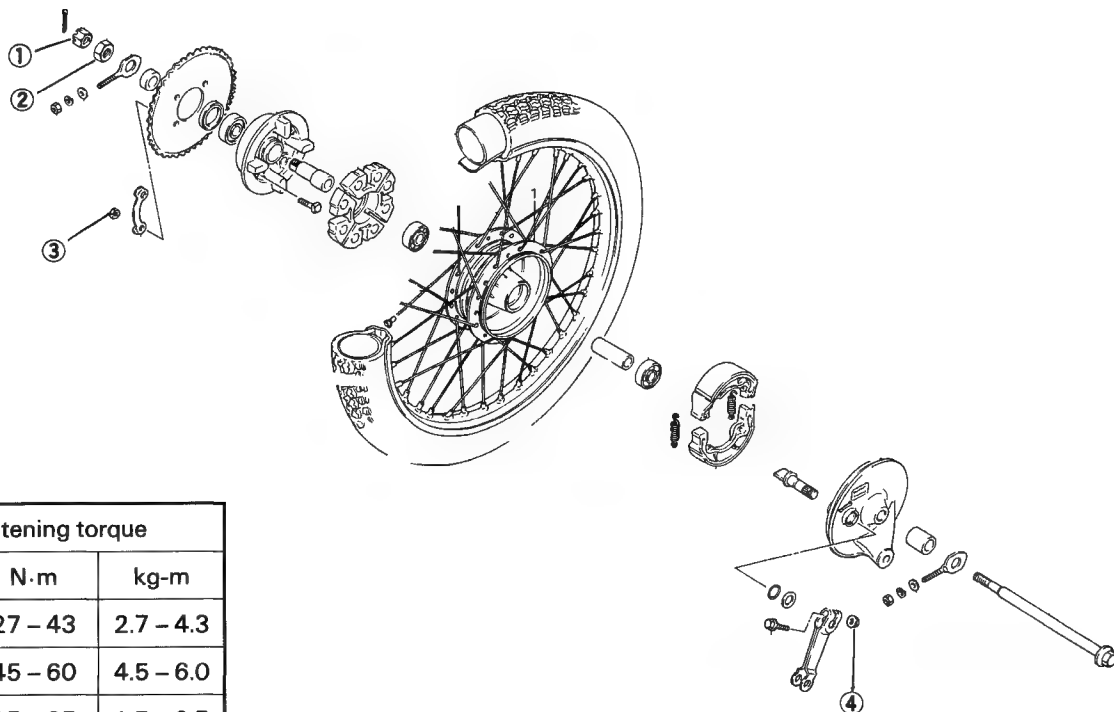
Make sure that the steering turns smoothly and easily left and right.

- Tighten the following bolts and nuts to specified torque.

	N·m	kg-m
Fork upper bracket nut	60 – 100	6.0 – 10.0
Fork upper bracket bolt	15 – 25	1.5 – 2.5
Handlebar nut	10 – 15	1.0 – 1.5



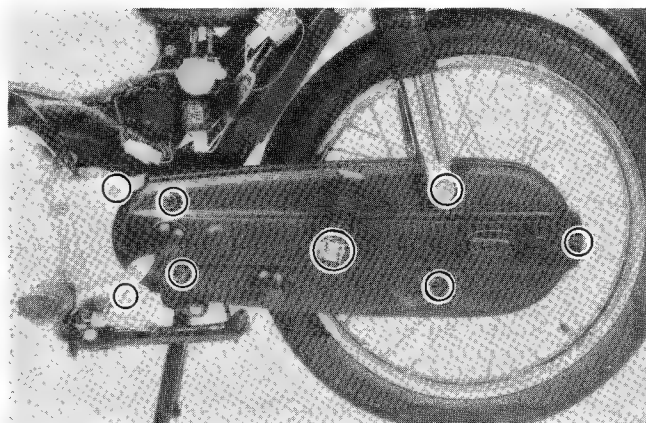
REAR WHEEL, SPROCKET AND REAR BRAKE



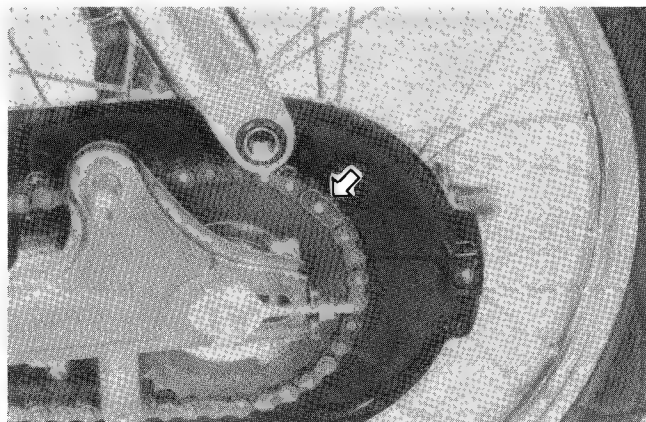
Tightening torque		
Item	N.m	kg-m
①	27 - 43	2.7 - 4.3
②	45 - 60	4.5 - 6.0
③	15 - 25	1.5 - 2.5
④	5 - 8	0.5 - 0.8

REMOVAL

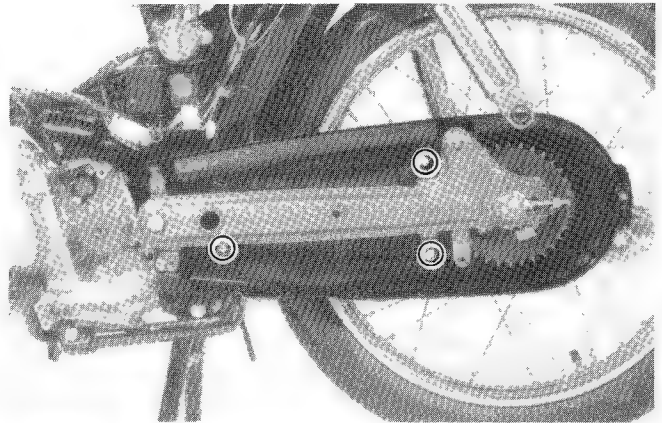
- Remove the engine sprocket cover, chain outer cover, pillion footrest and rear shock lower nut.



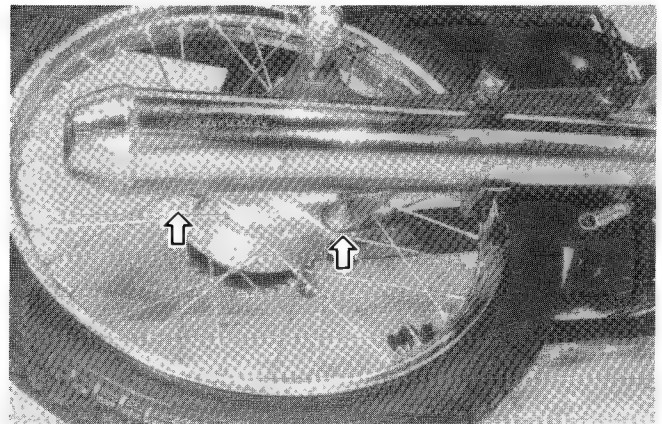
- Disconnect the chain.



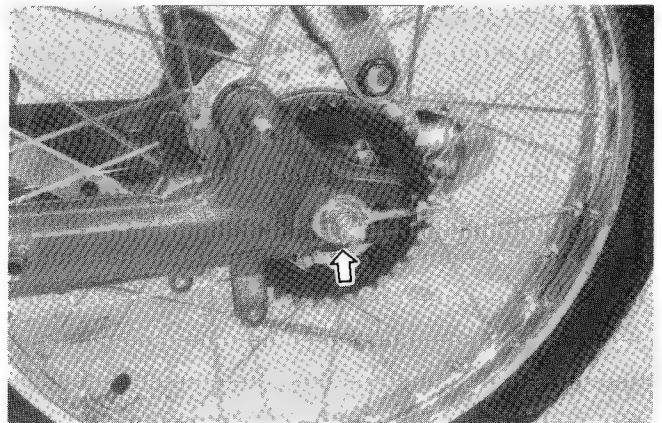
- Remove the inner chain cover.



- Disconnect the rear brake rod and torque link.

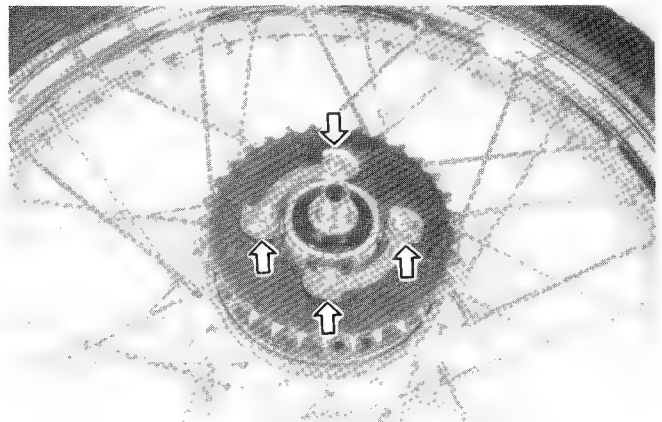


- Remove the cotter pin.
- Loosen the front axle nut and sleeve hub nut.
- Remove the rear wheel.



DISASSEMBLY

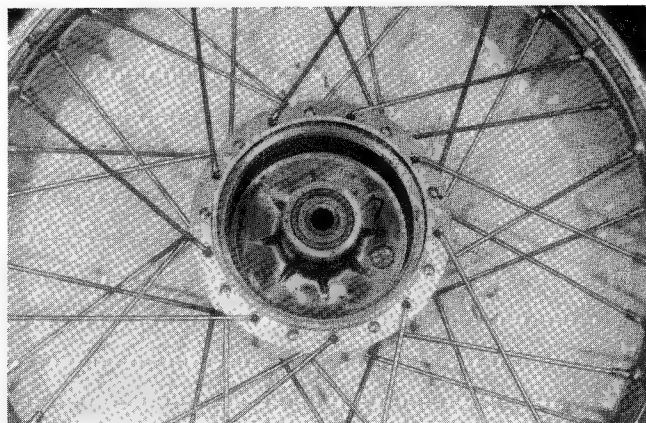
- Flatten the lock washer and then loosen the nut.



- Remove the rear wheel bearing and sprocket mounting drum bearing (refer to page 6-2).

REAR BRAKE

Refer to page 6-3



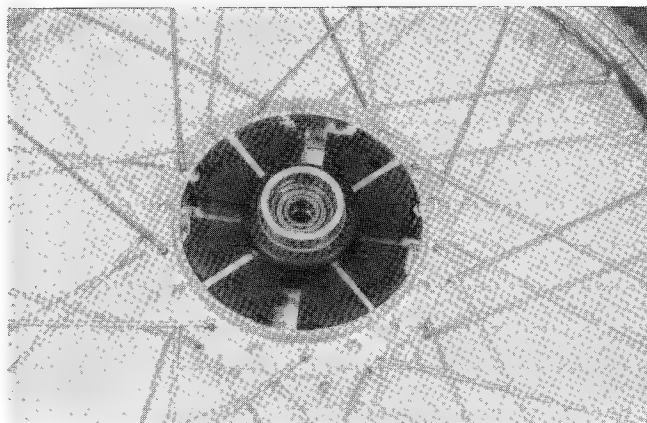
INSPECTION

- WHEEL BEARING AND DRUM BEARING
- AXLE SHAFT
- TIRE
- BRAKE DRUM
- BRAKE SHOE
- WHEEL RIM
- SPOKE

(Refer to page 6 – 3)
(Refer to page 6 – 3)
(Refer to page 2 – 13)
(Refer to page 6 – 4)
(Refer to page 6 – 4)
(Refer to page 6 – 3)
(Refer to page 6 – 4)

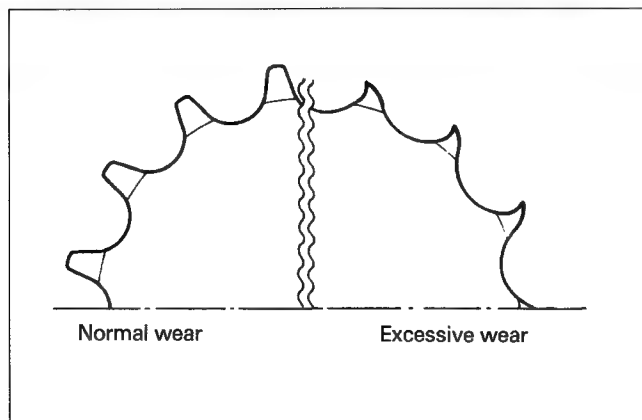
REAR HUB SHOCK ABSORBER

- Inspect the absorber for wear and damage.



SPROCKET

Inspect the sprocket teeth for wear. If they are worn as illustrated, replace the sprocket and drive chain.



REASSEMBLY AND REMOUNTING

Reassemble and remount the rear wheel, sprocket and brake in the reverse order of disassembly and removal, and also carry out the following steps:

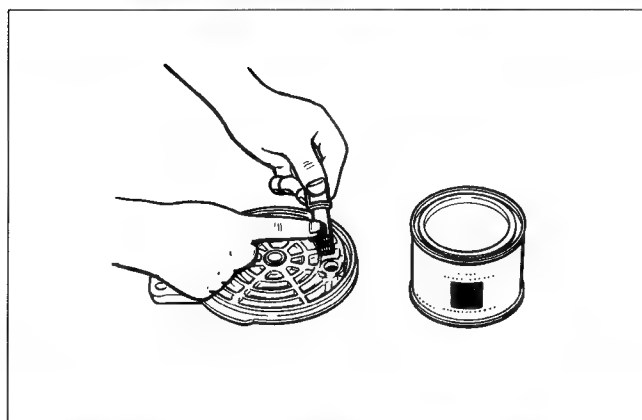
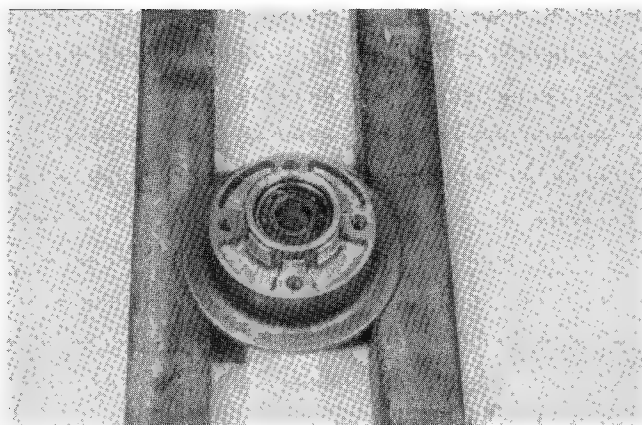
BEARING AND BRAKE CAMSHAFT

- Apply grease to wheel bearing, drum bearing and brake camshaft.

99000-25010	SUZUKI Super Grease "A"
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WARNING:

Be careful not to apply too much grease to the brake camshaft. If grease gets on the linings, brake slippage will result.

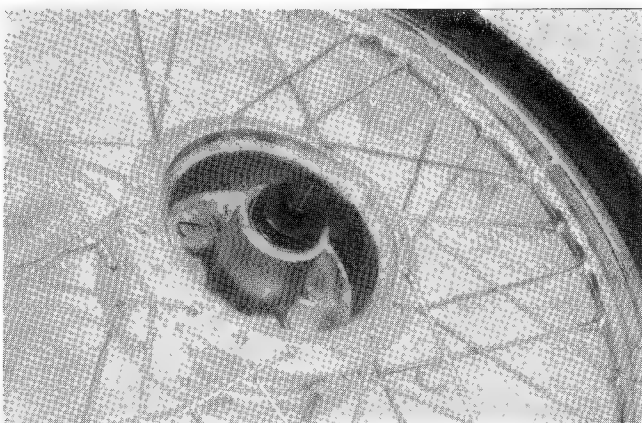


- Install the wheel bearing by using the special tool.

NOTE:

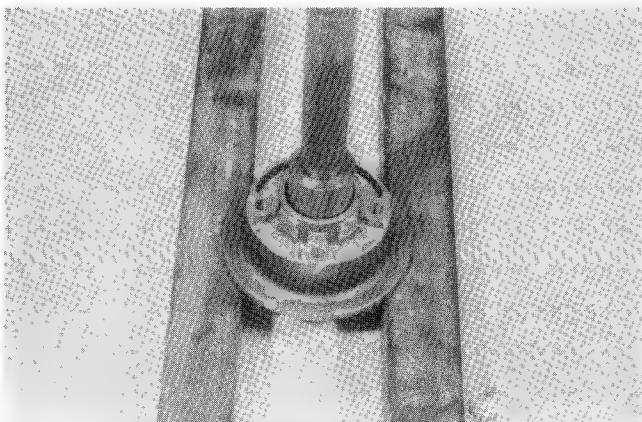
First install the wheel bearing for right side.

09924-84520	Bearing installer
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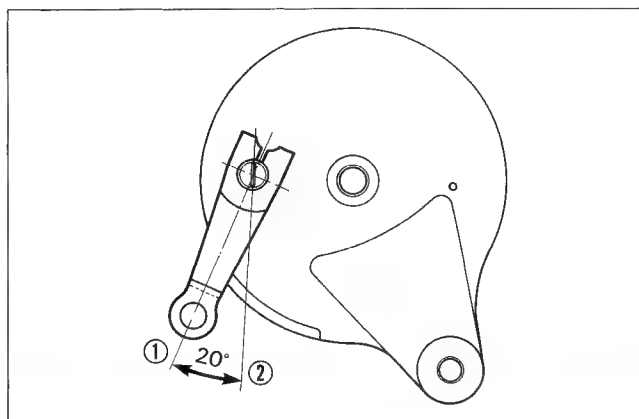
- Install the bearing to the rear sprocket mounting drum by using the special tool.

09922-55131	Bearing installer
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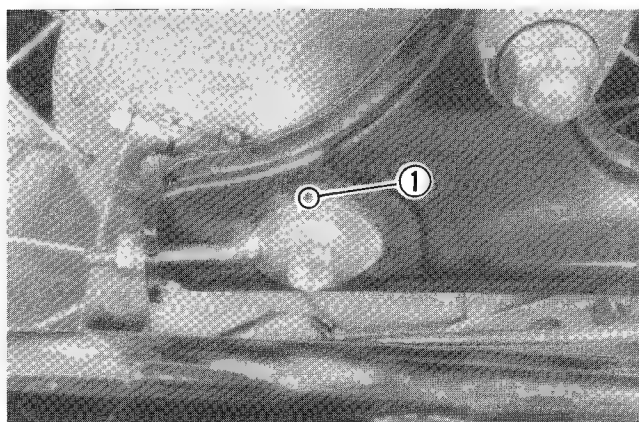


- When installing the cam lever, align the cam lever center line ① with indicator ② on the brake lining plate as shown in illustration.
- Tighten the cam lever nut to the specification.

Tightening torque	5 – 8 N·m (0.5 – 0.8 kg-m)
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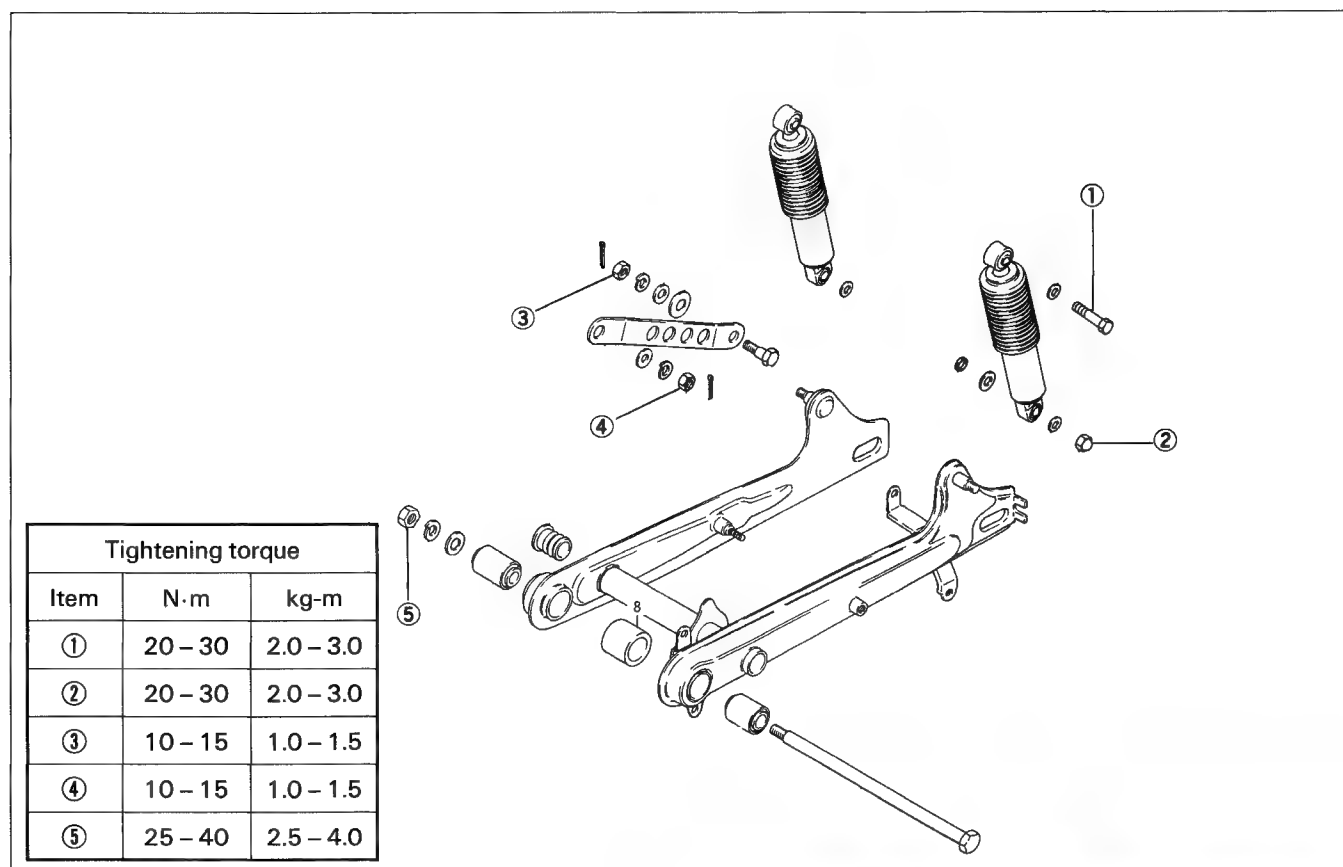
- When installing the chain adjuster, mark side ① is positioned outside.



- Tighten the following nut to the specified torque.

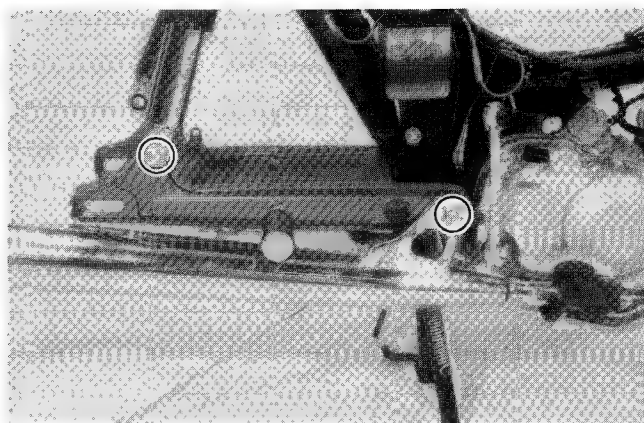
Item	N·m	kg-m
Rear shock absorber nut and bolt	20 – 30	2.0 – 3.0
Rear axle nut	27 – 43	2.7 – 4.3
Rear axle sleeve nut	45 – 60	4.5 – 6.0
Torque link nut	10 – 15	1.0 – 1.5
Rear sprocket mounting nut	15 – 25	1.5 – 2.5

REAR SWING ARM



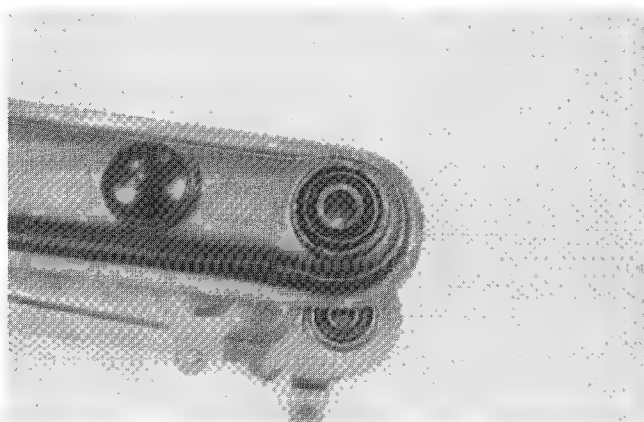
REMOVAL

- Remove the rear wheel (refer to page 6-15).
- Loosen the rear shock absorber nut and swing arm pivot nut.
- Draw out pivot shaft and remove the swing arm.

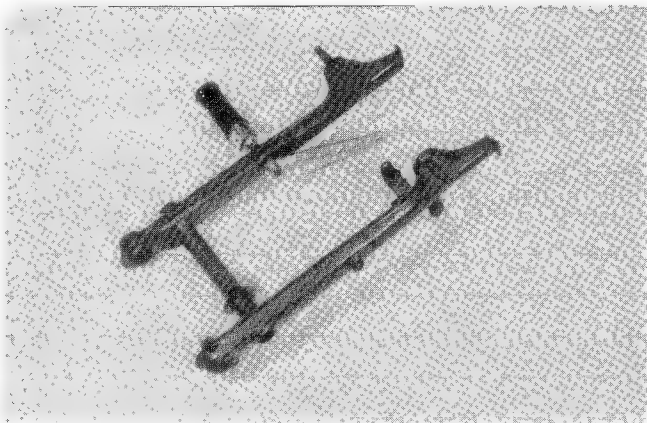


INSPECTION

- Inspect the bush for wear and damage.



- Inspect the swing arm for distortion.

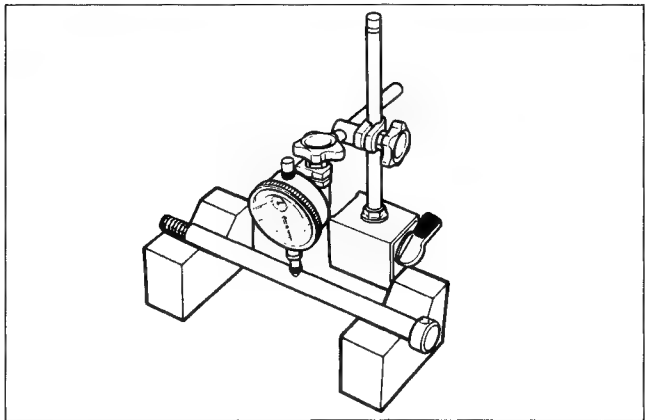


SWING ARM PIVOT SHAFT

Using a dial gauge, check the pivot shaft for runout and replace it if the runout exceeds the limit.

09900-20606	Dial gauge (1/100 mm)
09900-20701	Magnetic Stand
09900-21303	“V” block (75 mm)

Service Limit	0.6 mm
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REASSEMBLY AND REMOUNTING

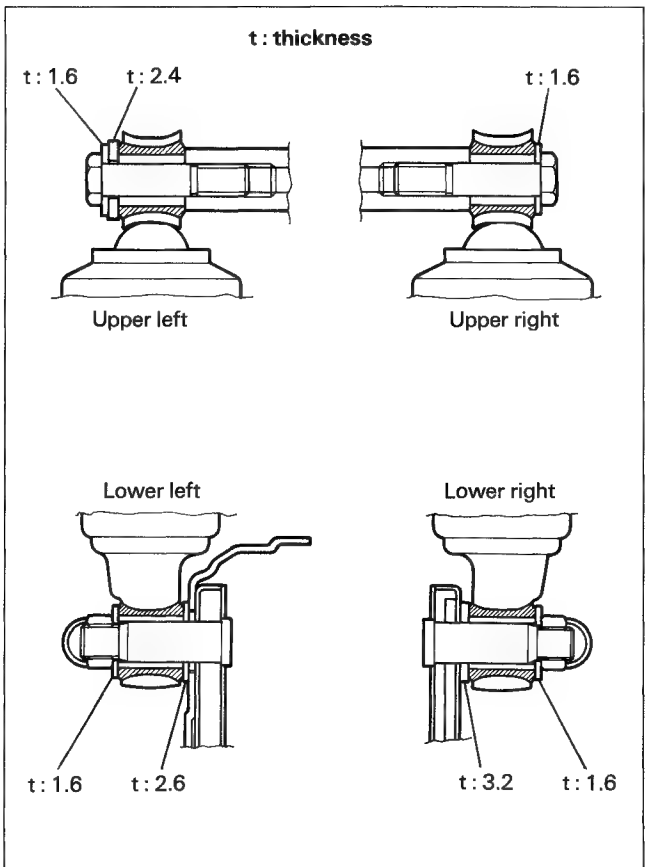
Reassemble and remount the rear shock absorber and swing arm in the reverse order of disassembly and removal, and also carry out the following steps:

REAR SHOCK ABSORBER

Tighten the nut to the specification.

Tightening torque (Upper and Lower)	20 – 30 N·m (2.0 – 3.0 kg·m)
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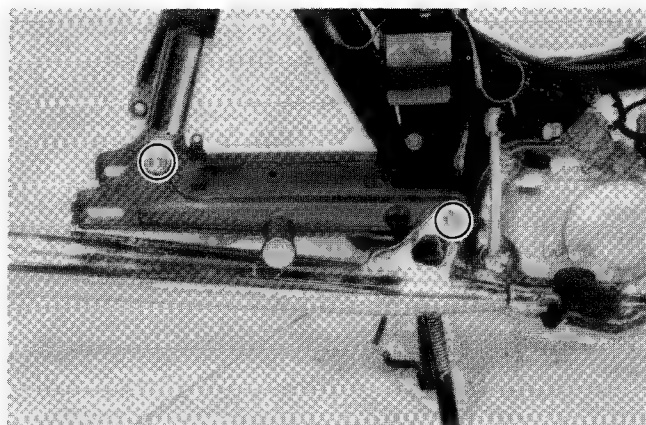
CAUTION:
When installing the washers, as shown in illustration.



SWING ARM PIVOT NUT

- Tighten the pivot nut to the specification.

Tightening torque	25 – 40 N·m (2.5 – 4.0 kg-m)
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SERVICING INFORMATION

CONTENTS

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WIRING DIAGRAM.....	7-17
WIRE, CABLE AND HOSE ROUTING	7-20

TROUBLESHOOTING

ENGINE

Complaint	Symptom and possible causes	Remedy
Engine will not start or is hard to start.	<ol style="list-style-type: none"> 1. Valve clearance out of adjustment. 2. Worn valve guides or poor seating of valves. 3. Valves mistiming. 4. Piston rings excessively worn. 5. Worn-down cylinder bore. 6. Poor seating of spark plug. <p>Plug not sparking</p> <ol style="list-style-type: none"> 1. Fouled spark plug. 2. Wet spark plug. 3. Defective magneto. 4. Defective CDI unit. 5. Defective ignition coil. 6. Open or short circuit in high-tension cord. <p>No fuel reaching the carburetor</p> <ol style="list-style-type: none"> 1. Clogged fuel tank vent hose. 2. Clogged or defective fuel cock. 3. Defective carburetor float valve. 4. Clogged fuel hose. 	<p>Adjust. Repair or replace. Adjust. Replace. Replace or rebore. Retighten.</p> <p>Clean or replace. Clean and dry. Replace. Replace. Replace. Replace.</p> <p>Clean. Clean or replace. Replace. Clean or replace.</p>
Engine stalls easily.	<ol style="list-style-type: none"> 1. Fouled spark plug. 2. Defective magneto. 3. Defective CDI unit. 4. Clogged fuel hose. 5. Clogged jets in carburetor. 6. Valve clearance out of adjustment. 	<p>Clean. Replace. Replace. Clean. Clean. Adjust.</p>
Noisy engin.	<p>Excessive valve chatter</p> <ol style="list-style-type: none"> 1. Valve clearance too large. 2. Weakened or broken valve springs. 3. Worn down rocker arm or rocker arm shaft. <p>Noise appears to come from piston</p> <ol style="list-style-type: none"> 1. Piston or cylinder worn down. 2. Combustion chamber fouled with carbon. 3. Piston pin or piston pin bore worn. 4. Piston rings or ring groove worn. <p>Noise seems to come from timing chain</p> <ol style="list-style-type: none"> 1. Stretched chain. 2. Worn sprockets. 3. Chain tensioner not working. <p>Noise seems to come from clutch</p> <ol style="list-style-type: none"> 1. Worn splines of countershaft or hub. 2. Worn teeth of clutch plates. 3. Distorted clutch plates, driven and drive. 4. Worn clutch release bearing. <p>Noise seems to come from crankshaft</p> <ol style="list-style-type: none"> 1. Worn or burnt bearings. 2. Big-end bearing worn or burnt. 3. Thrust clearance too large. 	<p>Adjust. Replace. Replace.</p> <p>Replace. Clean. Replace. Replace.</p> <p>Replace. Replace. Repair or replace.</p> <p>Replace. Replace. Replace. Replace.</p> <p>Replace. Replace. Replace.</p>

[illegible]

Complaint	Symptom and possible causes	Remedy
Engine lacks power.	<ol style="list-style-type: none"> 1. Loss of valve clearance. 2. Weakened valve springs. 3. Valve timing out of adjustment. 4. Worn piston ring or cylinder. 5. Poor seating of valves. 6. Fouled spark plug. 7. Worn rocker arms or shafts. 8. Spark plug gap incorrect. 9. Clogged jets in carburetor. 10. Float-chamber fuel level out of adjustment. 11. Clogged air cleaner element. 12. Too much engine oil. 13. Sucking air from intake pipe. 	Adjust. Replace. Adjust. Replace. Repair. Clean or replace. Replace. Adjust or replace. Clean. Adjust. Clean. Drain out excess oil. Retighten or replace.
Engine overheats.	<ol style="list-style-type: none"> 1. Heavy carbon deposit crown. 2. Not enough oil in the engine. 3. Defective oil pump or clogged oil circuit. 4. Fuel level too low in float chamber. 5. Air leak from intake pipe. 6. Use of incorrect engine oil. 	Clean. Add oil. Repair or clean. Adjust. Retighten or replace. Change.

CLUTCH SLIPS OR DRAGS

Symptom		Possible cause	Remedy
Clutch slips	First clutch	1. Excessively worn clutch shoe.	Replace.
	Gear shifting clutch	<ol style="list-style-type: none"> 1. Clutch out of adjustment. 2. Excessively worn clutch plates. 	Adjust. Replace.
Clutch drags	First clutch	1. Erratic clutch weight movement.	Replace.
	Gear shifting clutch	<ol style="list-style-type: none"> 1. Too heavy oil. 2. Clutch out of adjustment. 	Replace with proper grade oil. Adjust.

HARD GEARSHIFTING

Symptom	Possible cause	Remedy
Engine runs but motorcycle will not start or run.	<ol style="list-style-type: none"> 1. Damaged first clutch. 2. Gear shifting clutch out of adjustment. 3. Seized gears. 4. Damaged countershaft and drive-shaft. 	Replace clutch shoe. Adjust. Replace. Replace.
Gearshift point is too early.	1. Erratic clutch weight movement.	Replace clutch shoe.
Gearshift point too late.	1. Excessively worn clutch shoe.	Replace clutch shoe.

CARBURETOR

Complaint	Symptom and possible causes	Remedy
Trouble with starting.	<ol style="list-style-type: none"> 1. Starter jet is clogged. 2. Starter pipe is clogged. 3. Air leaking from a joint between starter body and carburetor. 4. Starter plunger is not operating properly. 	<p>Clean.</p> <p>Clean.</p> <p>Check starter body and carburetor for tightness, adjust and replace gasket.</p> <p>Check and adjust.</p>
Idling or low-speed trouble.	<ol style="list-style-type: none"> 1. Pilot jet, pilot air jet are clogged or loose. 2. Pilot outlet or bypass is clogged. 3. Starter plunger is not fully closed. 	<p>Check and clean.</p> <p>Check and clean.</p> <p>Check and adjust.</p>
medium- or high- speed trouble.	<ol style="list-style-type: none"> 1. Main jet or main air jet is clogged. 2. Needle jet is clogged. 3. Throttle valve is not operating properly. 4. Fuel filter is clogged. 	<p>Check and clean.</p> <p>Check and clean.</p> <p>Check throttle valve for operation.</p> <p>Check and clean.</p>
Overflow and fuel level fluctuations.	<ol style="list-style-type: none"> 1. Needle valve is worn or damaged. 2. Spring in needle valve is broken. 3. Float is not working properly. 4. Foreign matter has adjusted to needle valve. 5. Float chamber fuel level out of adjustment. 	<p>Replace.</p> <p>Replace.</p> <p>Check and adjust.</p> <p>Clean.</p> <p>Adjust float height.</p>

ELECTRICAL

Complaint	Symptom and possible causes	Remedy
No sparking or poor sparking.	<ol style="list-style-type: none"> 1. Defective ignition coil. 2. Defective spark plug. 3. Defective magneto. 4. Defective CDI unit. 5. Defective pick-up coil 	<p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p>
Spark plug soon becomes fouled with carbon.	<ol style="list-style-type: none"> 1. Mixture too rich. 2. Idling speed set too high. 3. Incorrect gasoline. 4. Dirty element in air cleaner. 5. Spark plug too cold. 	<p>Adjust carburetor.</p> <p>Adjust carburetor.</p> <p>Change.</p> <p>Clean.</p> <p>Replace by hot type plug.</p>
Spark plug becomes fouled with oil.	<ol style="list-style-type: none"> 1. Worn piston rings. 2. Piston or cylinder worn. 3. Excessive clearance of valve stems in valve guides. 4. Worn stem oil seal. 	<p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p>
Spark plug electrodes overheat or burn.	<ol style="list-style-type: none"> 1. Spark plug too hot. 2. The engine overheats. 3. Spark plug loose. 4. Mixture too lean. 	<p>Replace by cold type plug.</p> <p>Tune up.</p> <p>Retighten.</p> <p>Adjust carburetor.</p>
Generator does not charge.	<ol style="list-style-type: none"> 1. Open or short in lead wires, or loose lead connections. 2. Shorted, grounded or open generator coils. 3. Shorted or punctured regulator/rectifier. 	<p>Repair or replace or retighten.</p> <p>Replace.</p> <p>Replace.</p>

Complaint	Symptom and possible causes	Remedy
Generator does charge, but charging rate is below the specification.	<ol style="list-style-type: none"> 1. Lead wires tend to get shorted or open-circuited or loosely connected at terminals. 2. Grounded or open-circuited stator coils of generator. 3. Defective regulator/rectifier. 4. Not enough electrolyte in the battery. 5. Defective cell plates in the battery. 	<p>Repair or retighten.</p> <p>Replace. Replace. Add distilled water to the upper level. Replace the battery.</p>
Generator Overcharges.	<ol style="list-style-type: none"> 1. Internal short-circuit in the battery. 2. Resistor element in the regulator/rectifier damaged or defective. 3. Regulator/rectifier poorly grounded. 	<p>Replace the battery. Replace.</p> <p>Clean and tighten ground connection.</p>
Unstable charging.	<ol style="list-style-type: none"> 1. Lead wire insulation frayed due to vibration, resulting in intermittent shorting. 2. Generator internally shorted. 3. Defective regulator/rectifier. 	<p>Repair or replace.</p> <p>Replace. Replace.</p>

BATTERY

Complaint	Symptom and possible causes	Remedy
"Sulfation", acidic white powdery substance or spots on surfaces of cell plates.	<ol style="list-style-type: none"> 1. Not enough electrolyte. 2. Battery case is cracked. 3. Battery has been left in a run down condition for a long time. 4. Contaminated electrolyte (Foreign matter has entered the battery and become mixed with the electrolyte). 	<p>Add distilled water, if the battery has not been damaged and "sulfation" has not advanced too far, and recharge.</p> <p>Replace the battery. Replace the battery.</p> <p>If "sulfation" has not advanced too far, try to restore the battery by replacing the electrolyte, recharging it fully with the battery detached from the motorcycle and then adjusting electrolyte S.G.</p>
Battery runs down quickly.	<ol style="list-style-type: none"> 1. The charging method is not correct. 2. Cell plates have lost much of their active material as a result of over-charging. 3. A short-circuit condition exists within the battery due to excessive accumulation of sediments caused by the high electrolyte S.G. 4. Electrolyte S.G. is too low. 5. Contaminated electrolyte. 6. Battery is too old. 	<p>Check the generator, regulator/rectifier and circuit connections, and make necessary adjustments to obtain specified charging operation.</p> <p>Replace the battery, and correct the charging system. Replace the battery.</p> <p>Recharge the battery fully and adjust electrolyte S.G. Replace the electrolyte, recharge the battery and then adjust S.G. Replace the battery.</p>
Reversed battery polarity.	The battery has been connected the wrong way round in the system, so that it is being charged in the reverse direction.	Replace the battery and be sure to connect the battery properly.

Complaint	Symptom and possible causes	Remedy
Battery "sulfation".	<ol style="list-style-type: none"> 1. Charging rate too low or too high. (When not in use battery should be recharged at least once a month to avoid sulfation.) 2. Battery electrolyte excessive or insufficient, or its specific gravity too high or too low. 3. The battery left unused for too long in cold climate. 	<p>Replace the battery.</p> <p>Keep the electrolyte up the prescribed level, or adjust the S.G. by consulting the battery maker's directions.</p> <p>Replace the battery, if badly sulfated.</p>
Battery discharges too rapidly	<ol style="list-style-type: none"> 1. Dirty container top and sides. 2. Impurities in the electrolyte or electrolyte S.G. is too high. 	<p>Clean.</p> <p>Change the electrolyte by consulting the battery maker's directions.</p>

CHASSIS

Complaint	Symptom and possible causes	Remedy
Handling feels too heavy or stiff.	<ol style="list-style-type: none"> 1. Steering stem nut overtightened. 2. Worn bearing or race in steering stem. 3. Distorted steering stem. 4. Not enough pressure in tires. 	<p>Adjust.</p> <p>Replace.</p> <p>Replace.</p> <p>Adjust.</p>
Wobbly handling.	<ol style="list-style-type: none"> 1. Loss of balance between right and left front suspensions. 2. Distorted front fork. 3. Distorted front axle or crooked tire. 	<p>Adjust or replace.</p> <p>Repair or replace.</p> <p>Replace.</p>
Wobbly front wheel.	<ol style="list-style-type: none"> 1. Distorted wheel rim. 2. Worn or loose front wheel bearings. 3. Loose wheel spokes. 4. Defective or incorrect tire. 5. Loose nut on axle. 	<p>Replace.</p> <p>Replace.</p> <p>Retighten.</p> <p>Replace.</p> <p>Retighten.</p>
Front suspension too soft.	<ol style="list-style-type: none"> 1. Weakened springs. 2. Weakened damper 	<p>Replace.</p> <p>Replace</p>
Wobbly rear wheel.	<ol style="list-style-type: none"> 1. Distorted wheel rim. 2. Worn or loose rear wheel bearings. 3. Loose wheel spokes. 4. Defective or incorrect tire. 5. Worn swing arm bush. 6. Loose nuts on rear shock. 7. Loose nut on axle. 	<p>Replace.</p> <p>Replace.</p> <p>Retighten.</p> <p>Replace.</p> <p>Replace.</p> <p>Retighten.</p> <p>Retighten.</p>
Rear suspension too soft.	<ol style="list-style-type: none"> 1. Weakened springs. 	<p>Replace.</p>
Rear suspension too stiff.	<ol style="list-style-type: none"> 1. Worn swing arm bush. 	<p>Replace.</p>
Noisy rear suspension.	<ol style="list-style-type: none"> 1. Loose nuts on shock. 2. Worn swing arm bush. 	<p>Retighten.</p> <p>Replace.</p>
Poor braking. (FRONT and REAR)	<ol style="list-style-type: none"> 1. Linings worn down. 2. Too much play on brake lever or pedal. 	<p>Replace.</p> <p>Adjust.</p>

TIGHTENING TORQUE

ENGINE

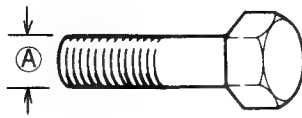
ITEM		N·m	kg·m
Cylinder head nut		18 – 22	1.8 – 2.2
Cylinder head bolt		8 – 12	0.8 – 1.2
Cylinder nut		8 – 12	0.8 – 1.2
Spark plug		10 – 12	1.0 – 1.2
Valve clearance inspection cap bolt		8 – 12	0.8 – 1.2
Cylinder head right cover bolt		8 – 12	0.8 – 1.2
Cam sprocket bolt		10 – 12	1.0 – 1.2
Cylinder head left cover bolt		8 – 12	0.8 – 1.2
Cylinder stud bolt	M6	8 – 12	0.8 – 1.2
	M8	18 – 28	1.8 – 2.8
Cam chain guide bolt		8 – 12	0.8 – 1.2
Chain tensioner mounting bolt		6 – 8	0.6 – 0.8
Chain tensioner bolt		6 – 8	0.6 – 0.8
Engine oil filter case nut		55 – 70	5.5 – 7.0
Shift arm stopper bolt		15 – 23	1.5 – 2.3
Magneto rotor nut		35 – 43	3.5 – 4.3
Engine mounting nut		28 – 34	2.8 – 3.4
Exhaust pipe bolt		8 – 12	0.8 – 1.2

CHASSIS

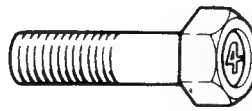
ITEM		N·m	kg·m
Front axle nut		27 – 43	2.7 – 4.3
Front shock absorber upper bolt		10 – 15	1.0 – 1.5
Front shock absorber lower bolt		10 – 15	1.0 – 1.5
Rocker arm bolt		20 – 30	2.0 – 3.0
Stopper mounting bolt		10 – 15	1.0 – 1.5
Front fork upper bracket bolt		15 – 25	1.5 – 2.5
Front fork upper bracket nut		60 – 100	6.0 – 10.0
Handlebar mounting nut		10 – 15	1.0 – 1.5
Brake cam lever nut		5 – 8	0.5 – 0.8
Front footrest bolt		10 – 15	1.0 – 1.5
Rear axle nut		27 – 43	2.7 – 4.3
Rear axle sleeve nut		45 – 60	4.5 – 6.0
Swing arm pivot nut		25 – 40	2.5 – 4.0
Rear torque link nut		10 – 15	1.0 – 1.5
Rear shock absorber bolt and nut		20 – 30	2.0 – 3.0
Rear sprocket mounting nut		15 – 25	1.5 – 2.5
Spoke nipple		2.5 – 3	0.25 – 0.3

TORQUE SPECIFICATIONS

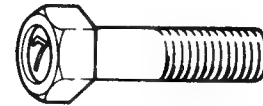
The table below, relating tightening torque to thread diameter, lists the basic torque for the generally bolts and nuts used on SUZUKI Motorcycles. However, the actual torque that is necessary may vary among bolts and nuts with the same thread diameter. Refer to this table for only the bolts and nuts and included in the tables "Engine" and "Chassis". All of the values are for use with dry, solvent-cleaned threads.



Conventional bolt



"4" marked bolt



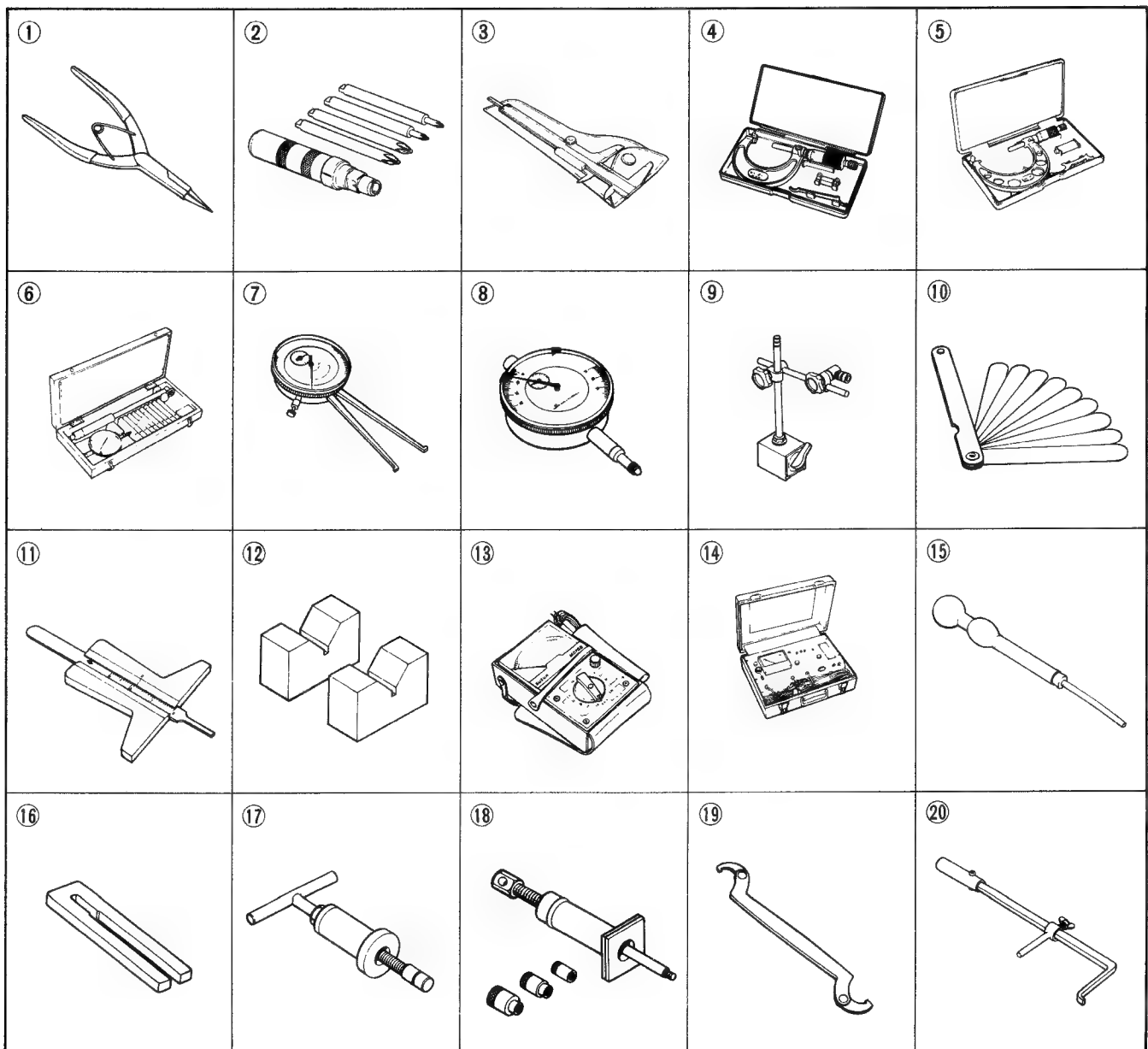
"7" marked bolt

Bolt Diameter Ⓐ (mm)	Conventional or "4" marked bolt		"7" marked bolt	
	N·m	kg-m	N·m	kg-m
4	1 – 2	0.1 – 0.2	1.5 – 3	0.15 – 0.3
5	2 – 4	0.2 – 0.4	3 – 6	0.3 – 0.6
6	4 – 7	0.4 – 0.7	8 – 12	0.8 – 1.2
8	10 – 16	1.0 – 1.6	18 – 28	1.8 – 2.8
10	22 – 35	2.2 – 3.5	40 – 60	4.0 – 6.0
12	35 – 55	3.5 – 5.5	70 – 100	7.0 – 10.0
14	50 – 80	5.0 – 8.0	110 – 160	11.0 – 16.0
16	80 – 130	8.0 – 13.0	170 – 250	17.0 – 25.0
18	130 – 190	13.0 – 19.0	200 – 280	20.0 – 28.0

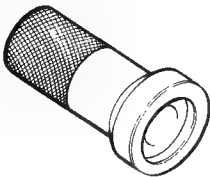

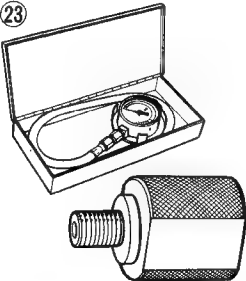
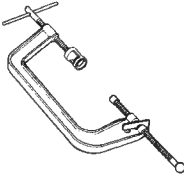
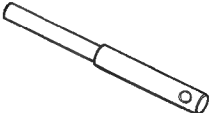



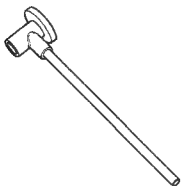
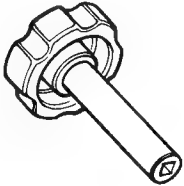
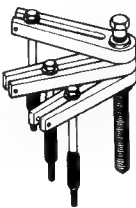
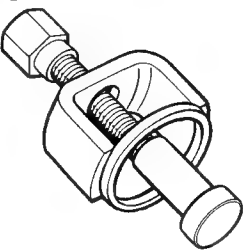
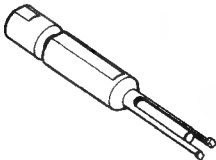
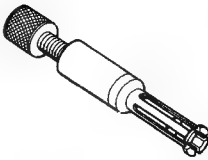
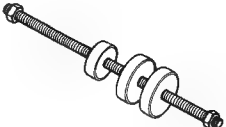
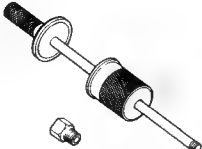
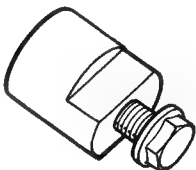
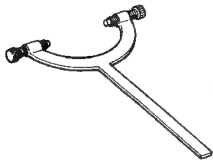
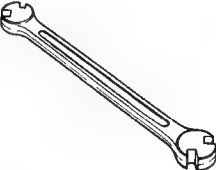
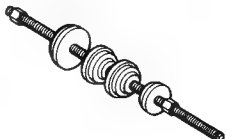
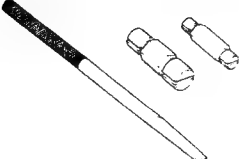
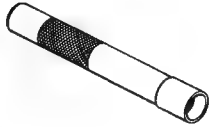

SPECIAL TOOL

Item	Part No.	Part Name
①	09900-06107	Snap ring pliers
②	09900-09003	Impact driver set
③	09900-20101	Vernier caliper (150 mm)
④	09900-20202	Micrometer (25 – 50 mm)
⑤	09900-20203	Micrometer (50 – 75 mm)
	09900-20205	Micrometer (0 – 25 mm)
⑥	09900-20508	Cylinder gauge
⑦	09900-20605	Dial calipers
⑧	09900-20606	Dial gauge (1/100 mm)
⑨	09900-20701	Magnetic stand
⑩	09900-20803	Thickness gauge
⑪	09900-20805	Tire depth gauge
⑫	09900-21303	"V" block set (75 mm)
⑬	09900-25002	Pocket tester
⑭	09900-28106	Electro tester
⑮	09900-28403	Hydrometer
⑯	09910-20115	Conrod holder
⑰	09910-32812	Crankshaft installer
	09910-32820	Spacer
	09911-11310	Attachment
⑱	09910-34510	Piston pin puller
⑲	09910-60611	Universal clamp wrench
⑳	09913-50121	Oil seal remover
㉑	09913-70122	
	09913-75510	Bearing installer/remover
	09914-79610	
㉒	09915-63310	Compression gauge adaptor
	09915-64510	Compression gauge
㉓	09915-74510	Oil pressure gauge
	09915-74531	Attachment
㉔	09916-14510	Valve spring compressor
	09916-14520	Adaptor
㉕	09916-24310	Solid pilot (N-100-0.5)
	09916-29010	Valve seat cutter head (N-120)
	09916-24470	Valve seat cutter head (N-131)
	09916-20410	Valve seat cutter head (N-134)
	09916-24440	Adaptor
	09916-24980	T-handle wrench
㉖	09916-34541	Reamer handle
	09916-34570	Valve guide reamer
	09916-34580	Valve guide hole reamer
㉗	09916-44310	Valve guide remover/installer
㉘	09916-84510	Tweezers
㉙	09917-13310	Valve adjuster wrench
㉚	09917-14910	Valve adjust driver
㉛	09920-13120	Crankcase separating tool

Item	Part No.	Part Name
32	09920-33510	Clutch spring compressor
33	09921-20210	Bearing puller
34	09923-73210	Bearing puller
35	09924-84520	Bearing installer set
36	09930-30102	Sliding shaft
37	09930-34951	Rotor remover
38	09930-44912	Rotor holder
39	09940-60113	Spoke nipple wrench
40	09941-34513	Steering race installer
41	09941-50110	Wheel bearing remover
42	09941-74910	Steering bearing installer
43	09922-55131	Bearing installer



7-11 SERVICING INFORMATION

<p>21</p> 	<p>22</p> 	<p>23</p> 	<p>24</p> 	<p>25</p> 
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<p>36</p> 	<p>37</p> 	<p>38</p> 	<p>39</p> 	<p>40</p> 
<p>41</p> 	<p>42</p> 	<p>43</p> 		

SERVICE DATA**VALVE + GUIDE**

Unit: mm

ITEM	STANDARD		LIMIT
Valve diam.	IN.	24 ± 0.1	—
	EX.	21 ± 0.1	—
Valve lift	IN.	5.5	—
	EX.	5.3	—
Valve clearance (when cold)	IN. & EX.	0.03 – 0.07	—
Valve guide to valve stem clearance	IN.	0.020 – 0.053	0.35
	EX.	0.030 – 0.063	0.35
Valve guide I.D.	IN. & EX.	5.000 – 5.018	—
Valve stem O.D.	IN.	4.965 – 4.980	—
	EX.	4.955 – 4.970	—
Valve stem runout	IN. & EX.	—	0.05
Valve head thickness	IN. & EX.	—	0.5
Valve stem end length	IN. & EX.	—	2.6
Valve seat width	IN. & EX.	1	—
Valve head radial runout	IN. & EX.	—	0.03
Valve spring free length	INNER	—	29.6
	OUTER	—	34.5
Valve spring tension	INNER	5.58 – 6.42 kg at length 24 mm	—
	OUTER	10.69 – 12.31 kg at length 27 mm	—

CAMSHAFT + CYLINDER HEAD

Unit: mm

ITEM	STANDARD		LIMIT
Cam height	IN.	27.410	27.110
	EX.	27.270	26.970
Cam chain 20-pitch length	—		128.90
Rocker arm I.D.	IN. & EX.	10.003 – 10.018	—
Rocker arm shaft O.D.	IN. & EX.	9.981 – 9.990	—
Cylinder head distortion	—		0.05

CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD			LIMIT
Compression pressure	12 – 16 kg/cm ²			10 kg/cm ²
Piston to cylinder clearance	0.03 – 0.04			0.120
Cylinder bore	51.000 – 51.015			51.100
Piston diam.	50.965 – 50.980 Measure at 11 from the skirt end.			50.880
Cylinder distortion	—			0.05
Piston ring free end gap	1st	R	Approx. 4.2	3.4
	2nd	R	Approx 6.8	5.4

ITEM	STANDARD		LIMIT
Piston ring end gap	1st	0.10–0.30	0.70
	2nd	0.10–0.30	0.70
Piston ring to groove clearance	1st	———	0.180
	2nd	———	0.150
Piston ring groove width	1st	1.22–1.24	———
	2nd	1.21–1.23	———
	Oil	2.01–2.03	———
Piston ring thickness	1st	1.175–1.190	———
	2nd	1.175–1.190	———
Piston pin bore	14.002–14.008		14.035
Piston pin O.D.	13.996–14.000		13.976

CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD	LIMIT
Conrod small end I.D	14.006–14.014	14.040
Conrod deflection	———	3.0
Conrod big end side clearance	0.10–0.45	1.0
Crank web to web width	40 ± 0.1	———
Crankshaft thrust bearing thickness	0.60–1.30	———
Crankshaft thrust clearance	0.00–0.07	———
Crankshaft runout	———	0.05

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	2.117 (36/17)	———
Oil pressure (at 60°C, 140°F)	Above 0.2 kg/cm ² Below 0.4 kg/cm ² at 3 000 r/min.	———

CLUTCH

Unit: mm

ITEM	STANDARD		LIMIT
Clutch release screw	1/8 turn back		———
Drive plate thickness	2.3–2.5		2.0 (No groove)
Drive plate claw width	15.95–16.15		15.55
Driven plate thickness	No.1	2.1 ± 0.1	1.6 (No groove)
	No.2	2.6 ± 0.1	2.2 (No groove)
Clutch wheel I.D.	105.00–105.15		———
Clutch shoe O.D.	———		No groove
Clutch engagement	2 000 ± 200 r/min.		———
Clutch lock-up	3 200 ± 300 r/min.		———

TRANSMISSION + DRIVE CHAIN

Unit: mm (Except ratio)

ITEM		STANDARD		LIMIT
Primary reduction ratio		3.823 (65/17)		——
Final reduction ratio		2.285 (32/14)		——
Gear ratios	Low	3.400 (34/10)		——
	2nd	1.812 (29/16)		——
	Top	1.200 (24/20)		——
Shift fork to groove clearance		No.1, No.2	0.1—0.3	0.50
Shift fork groove width		No.1, No.2	4.5—4.6	——
Shift fork thickness		No.1, No.2	4.3—4.4	——
Drive chain		Type	D.I.D.: 428 TAKASAGO: RK428	——
		Links	94 links	——
		20-pitch length	——	259
Drive chain slack		10—15		——

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		MIKUNI VM16SH
Bore size		16 mm
I.D. No.		30A11
Idle r/min.		1 400 ± 150 r/min.
Float height		16.0 ± 1.0 mm
Main jet	(M.J.)	#95
Main air jet	(M.A.J.)	1.7 mm
Jet needle	(J.N.)	3N8-4th
Needle jet	(N.J.)	E-1
Cut-away	(C.A.)	3.5
Pilot jet	(P.J.)	#15
Pilot outlet	(P.O.)	1.0 mm
Air screw	(A.S.)	1 1/2 turns back
Valve seat	(V.S.)	1.5 mm
Starter jet	(G.S.)	#22.5
Throttle cable play		0.5—1.0 mm

ELECTRICAL

Unit: mm

ITEM	SPECIFICATION		NOTE
Ignition timing	15° B.T.D.C. Below 2 150 r/min. and 30° B.T.D.C. Above 3 500 r/min.		
Spark plug	Type	N.D.: CR6HS	E-02
	Gap	0.6—0.7	
	Type	NGK: C6HA N.D.: U20FS-L	The others
	Gap	0.6—0.7	

ITEM		SPECIFICATION		NOTE
Spark performance		Over 8 at 1 atm.		
Ignition coil resistance		Primary	B/Y – Ground 0 – 1 Ω	
		Secondary	Plug cap – Ground 13 – 20 k Ω	
Magneto coil resistance		Lighting	Y/W – B/W 0 – 1 Ω	
		Charging	W/R – B/W 0 – 1 Ω	
		Power surge	B/R – B/W 90 – 140 Ω	
		Pick up	R/B – B/W 80 – 120 Ω	
Regulated voltage	E-01D, 02	13.0 – 16.0V at 5000 r/min.		Night time
	The others	9.0 – 11.0V at 5000 r/min.		Night time
Battery		Type designation	YB5L-B	E-01D, 02
		Capacity	12V 5Ah/10HR	
		Standard electrolyte S.G.	1.28 at 20°C	
		Type designation	6N4-2A	The others
		Capacity	6V 4Ah/10HR	
		Standard electrolyte S.G.	1.28 at 20°C	
Fuse size		Main	10A	

D: Electric starter model

WATTAGE

ITEM		SPECIFICATION						
		E-01	E-24	E-30	E-43	E-45	E-01D	E-02
Headlight	HI	6V 25	←	←	←	←	12V 25	←
	LO	6V 25	←	←	←	←	12V 25	←
Parking or position light		6V 3.4	←	←	←	←	12V 3.4	←
Tail/Brake light		6V 8/10	←	←	←	←	12V 18.4/5.2	12V 21/5
Turn signal light		6V 8	←	←	←	←	12V 10	12V 21
Turn signal indicator light		6V 3	←	←	←	←	12V 3.4	←
Speedometer light		6V 3	←	←	←	←	12V 3.4	12V 3.4
High beam indicator light		6V 1.7	←	←	←	←	12V 1.7	←
Neutral indicator light		6V 3	←	←	←	←	12V 3.4	←

D: Electric starter model

BRAKE + WHEEL

Unit: mm

ITEM	STANDARD		LIMIT
Front brake lever distance	20–30		——
Rear brake pedal free travel	20–30		——
Rear brake pedal height	10		——
Brake drum I.D.	Front	——	110.7
	Rear	——	110.7
Brake lining thickness	——		1.5
Wheel rim runout	Axial	——	2.0
	Radial	——	2.0
Wheel axle runout	Front	——	0.25
	Rear	——	0.25
Tire size	Front	2.25–17 4PR	——
	Rear	2.50–17 6PR	——
Tire tread depth	Front	——	1.6
	Rear	——	1.6

SUSPENSION

Unit: mm

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	40	——	
Rear wheel travel	81	——	
Swingarm pivot shaft runout	——	0.6	

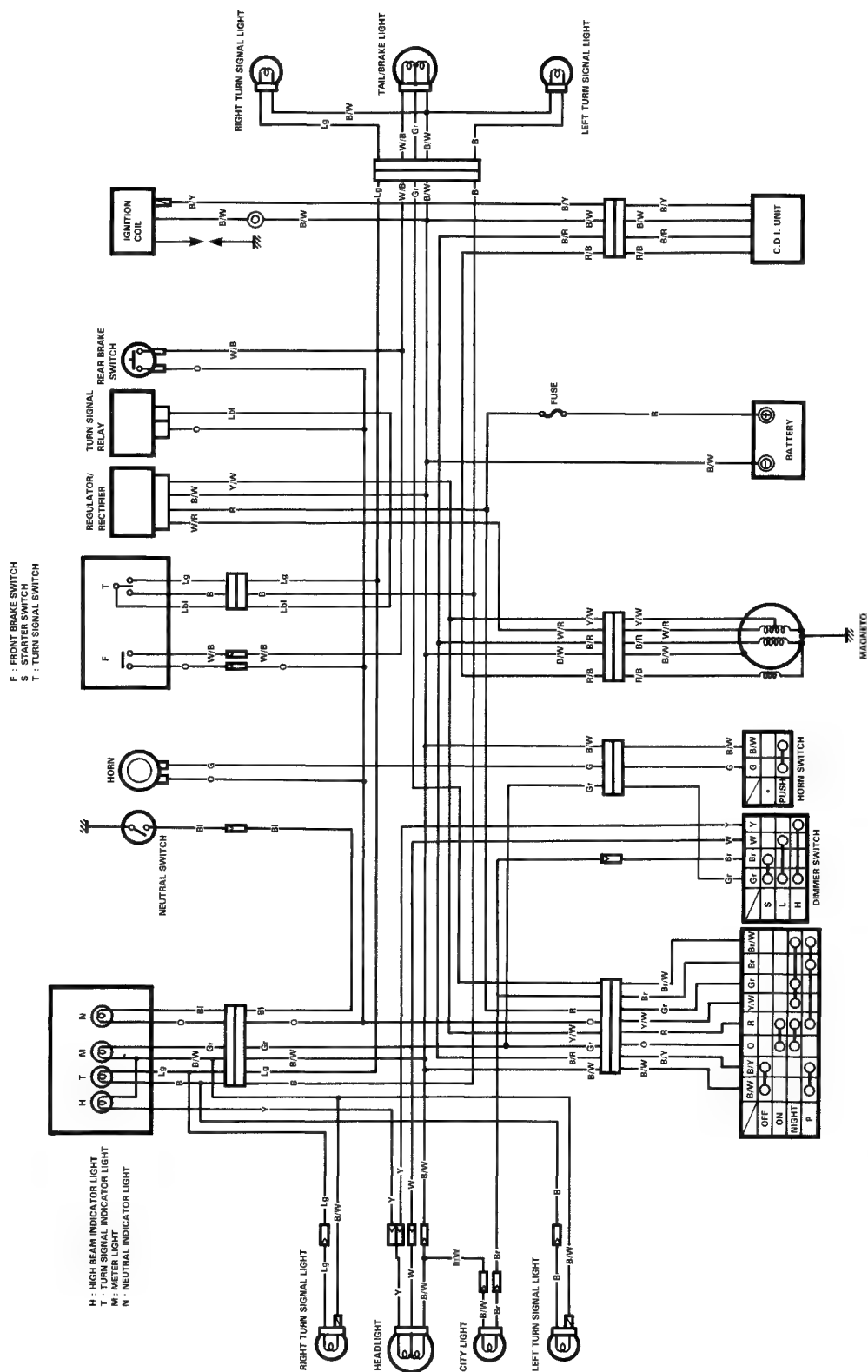
TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	NORMAL RIDING			
	SOLO RIDING		DUAL RIDING	
	kPa	kg/cm ²	kPa	kg/cm ²
FRONT	175	1.75	175	1.75
REAR	225	2.25	280	2.80

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Gasoline used should be graded 85-95 octane or higher. An unleaded or low-lead type gasoline is recommended.		
Fuel tank including reserve	5.0 L		
reserve	0.7 L		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	800 ml	
	Overhaul	840 ml	

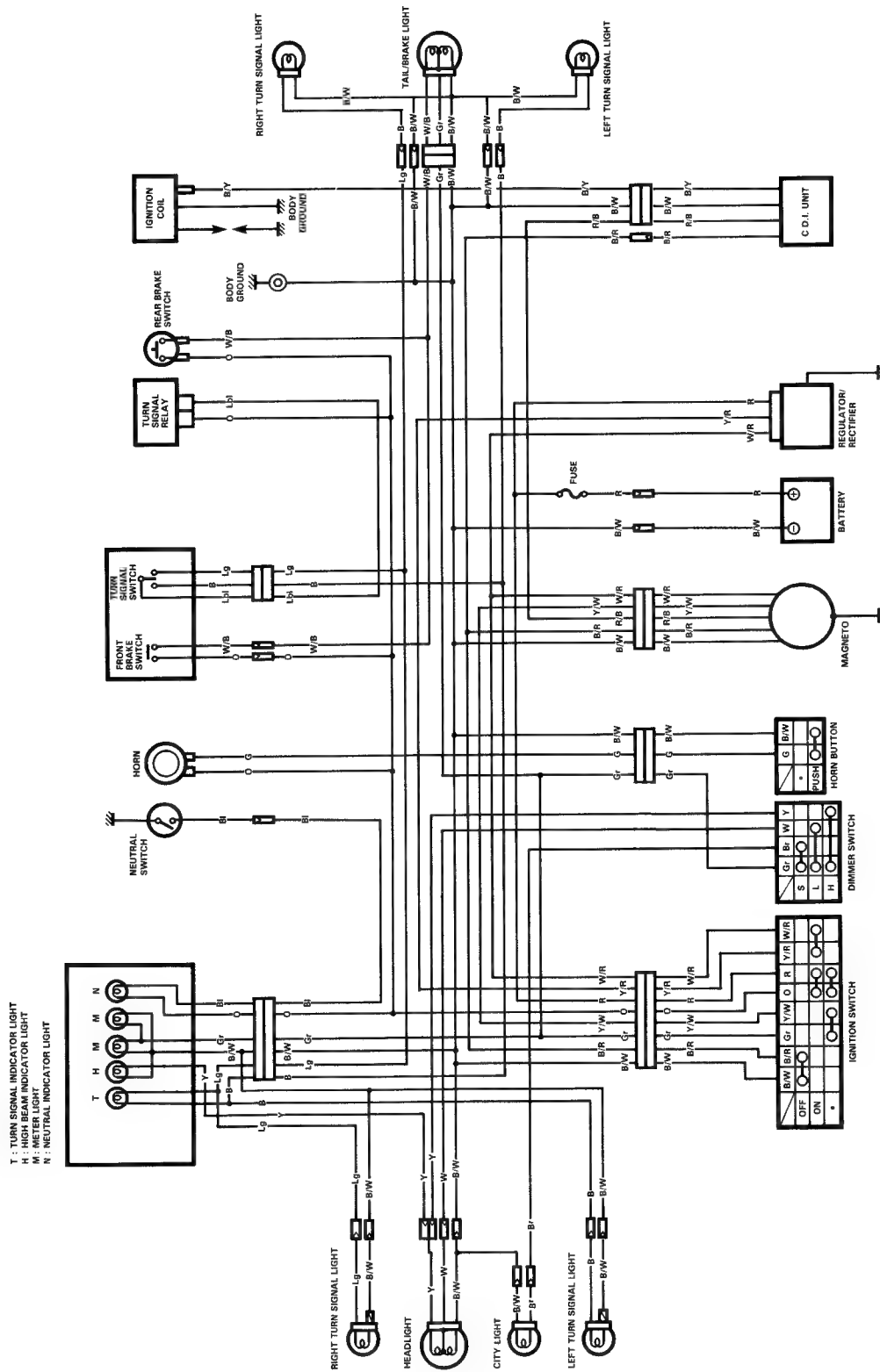
WIRING DIAGRAM (For E-02)



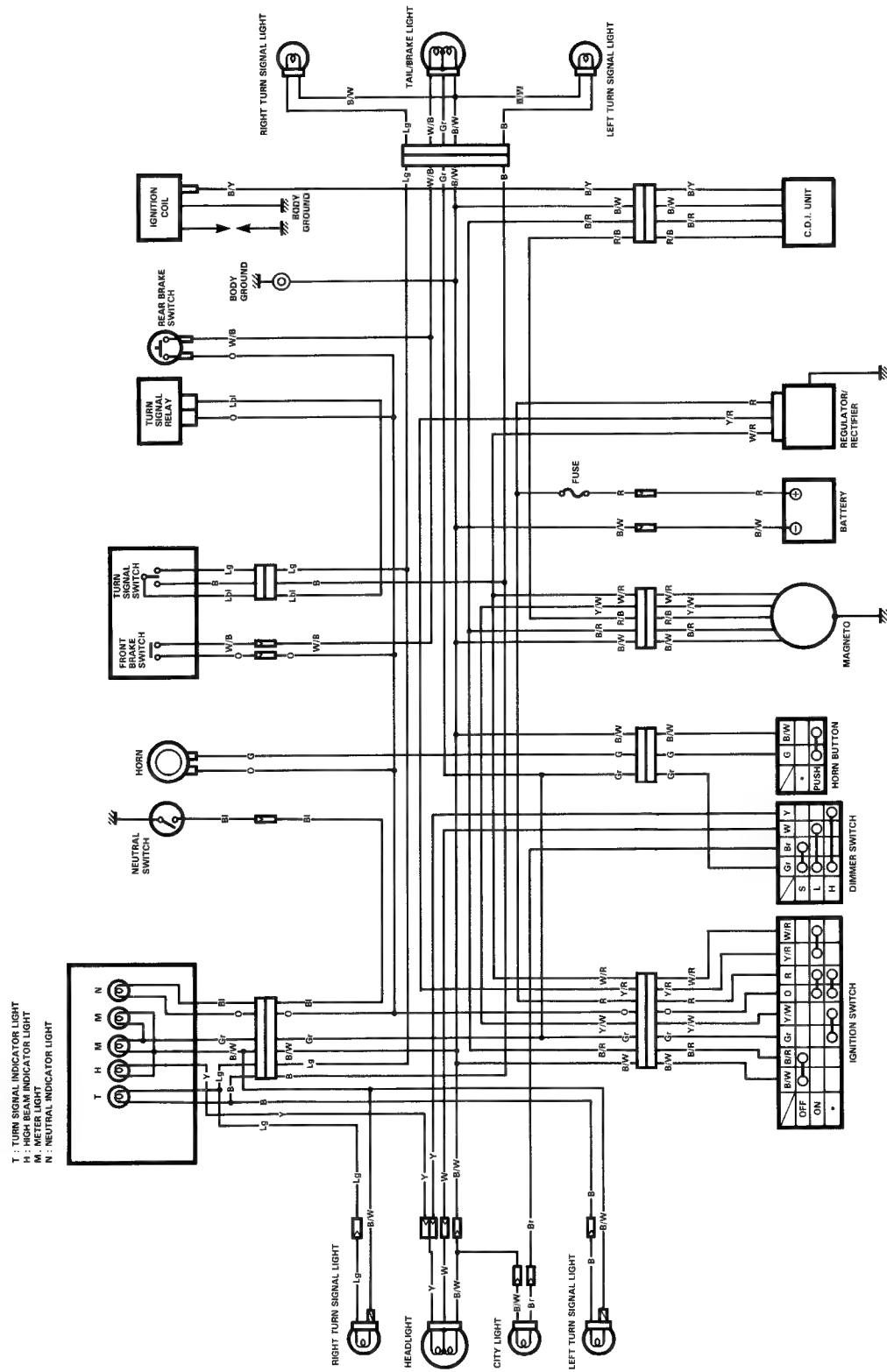
WIRE COLOR

Y Yellow
B/R Black with Red tracer
B/W ... Black with White tracer
B/Y Black with Yellow tracer
Br/W ... Brown with White tracer
R/B Red with Black tracer
W/B ... White with Black tracer
W/R ... White with Red tracer
Y/W ... Yellow with White tracer

(For E-24)



(For the others)

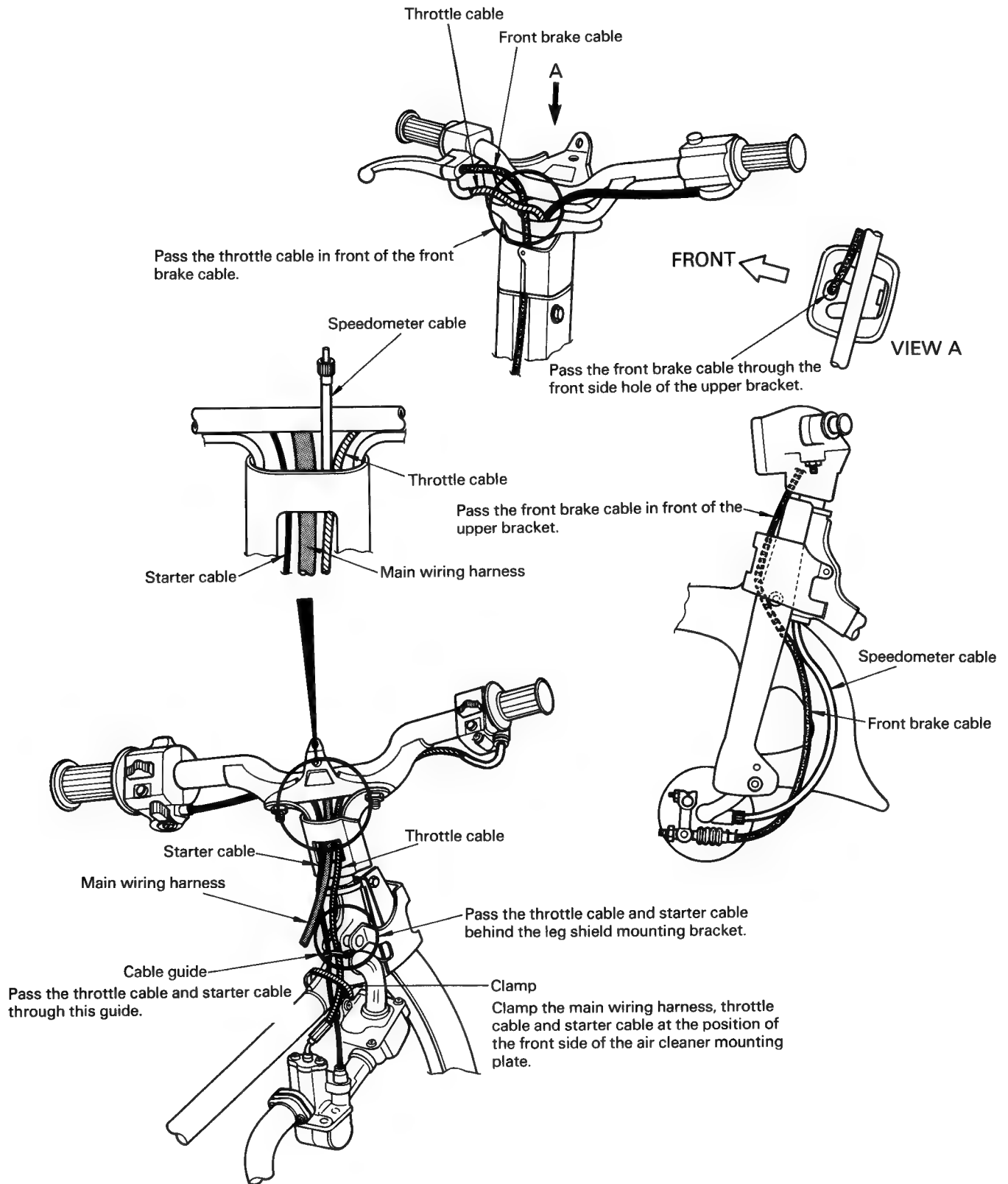


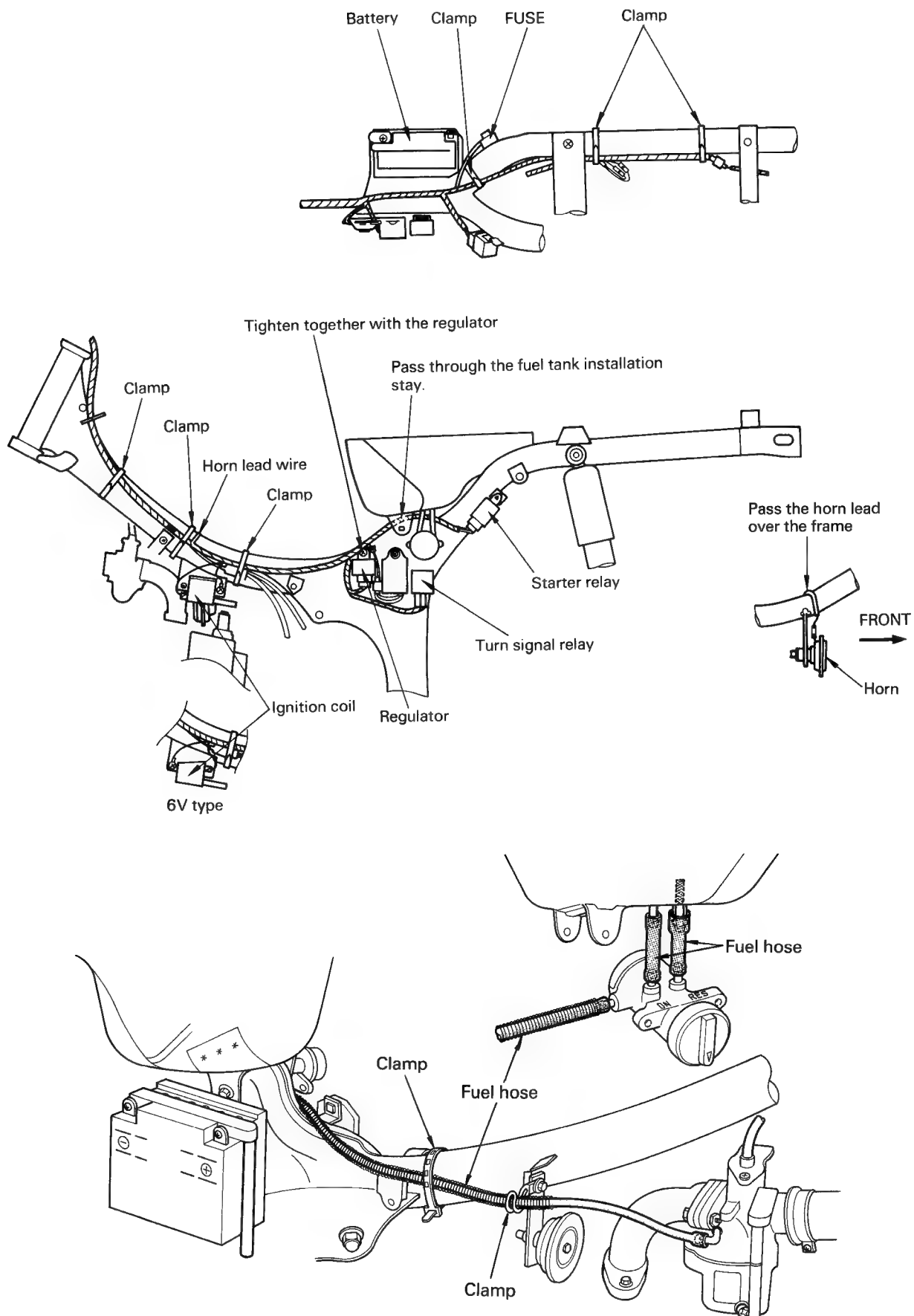
T : TURN SIGNAL INDICATOR LIGHT
H : HIGH BEAM INDICATOR LIGHT
M : METER LIGHT
N : NEUTRAL INDICATOR LIGHT

WIRE COLOR

- B Black
- Bl Blue
- Br Brown
- G Green
- Gr Gray
- Lbl Light blue
- Lg Light green
- O Orange
- R Red
- Y Yellow
- B/R Black with Red tracer
- B/W Black with White tracer
- B/Y Black with Yellow tracer
- R/B Red with Black tracer
- R/W Red with White tracer
- W/B White with Black tracer
- W/R White with Red tracer
- Y/G Yellow with Green tracer
- Y/W Yellow with White tracer

WIRE, CABLE AND HOSE ROUTING





FB100 (ELECTRIC STARTER MODEL)

FOREWORD

This section has been produced to aid Suzuki mechanics in properly maintaining and repairing FB100 (ELECTRIC STARTER MODEL).

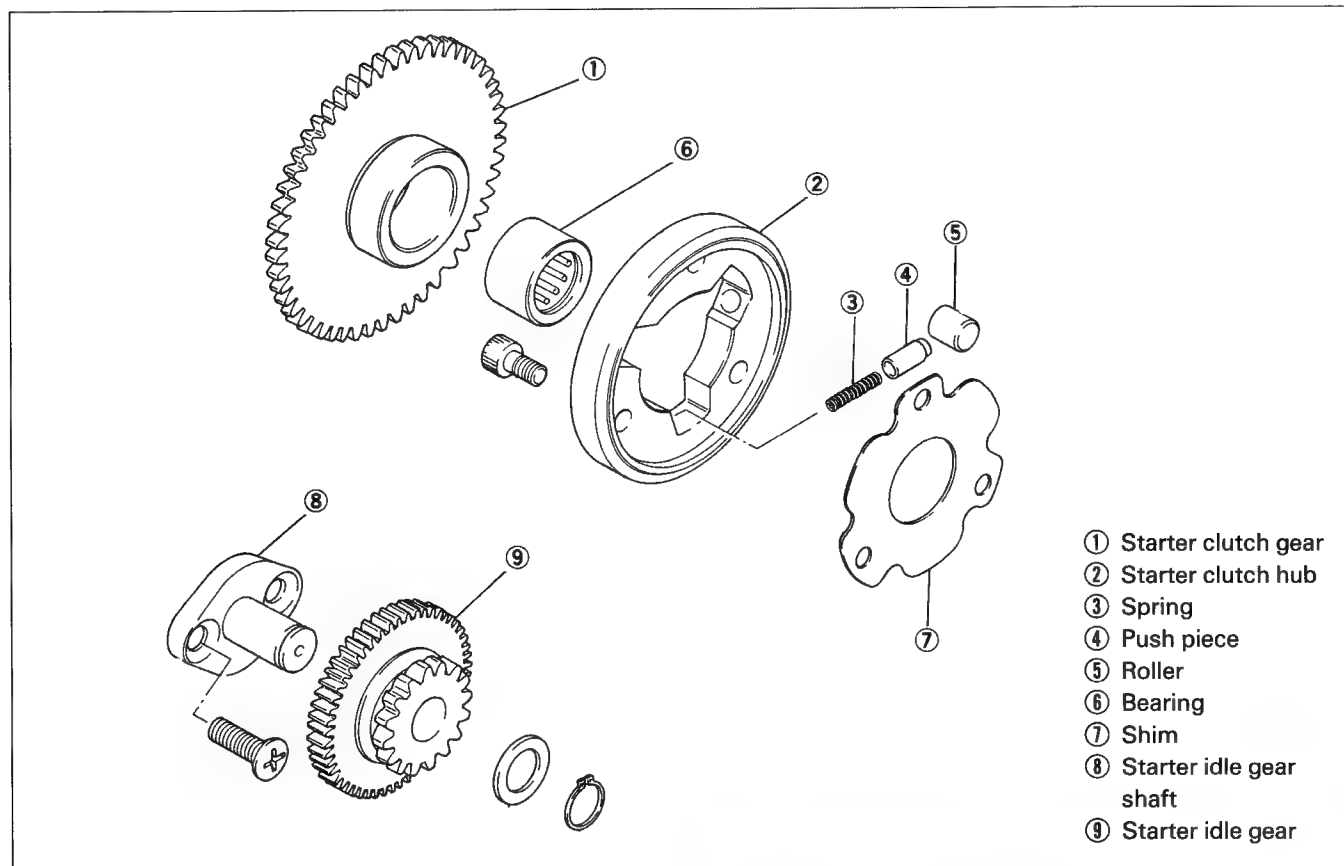
Please refer to the section 1 through 7 except for the items described in this section.

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ENGINE	8-1
STARTER SYSTEM.....	8-2
SWITCH	8-5
SERVICE DATA.....	8-5
WIRING DIAGRAM.....	8-6

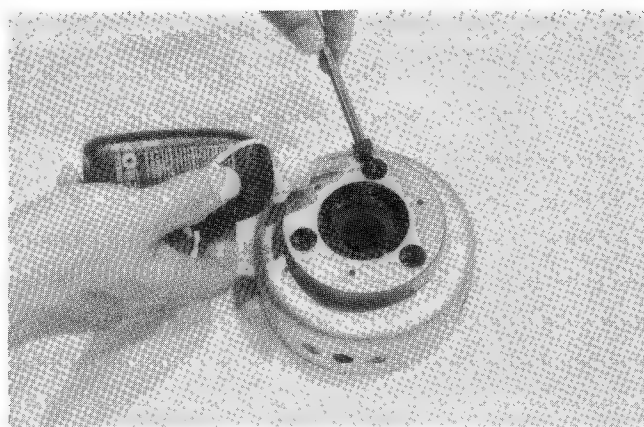
ENGINE

STARTER CLUTCH



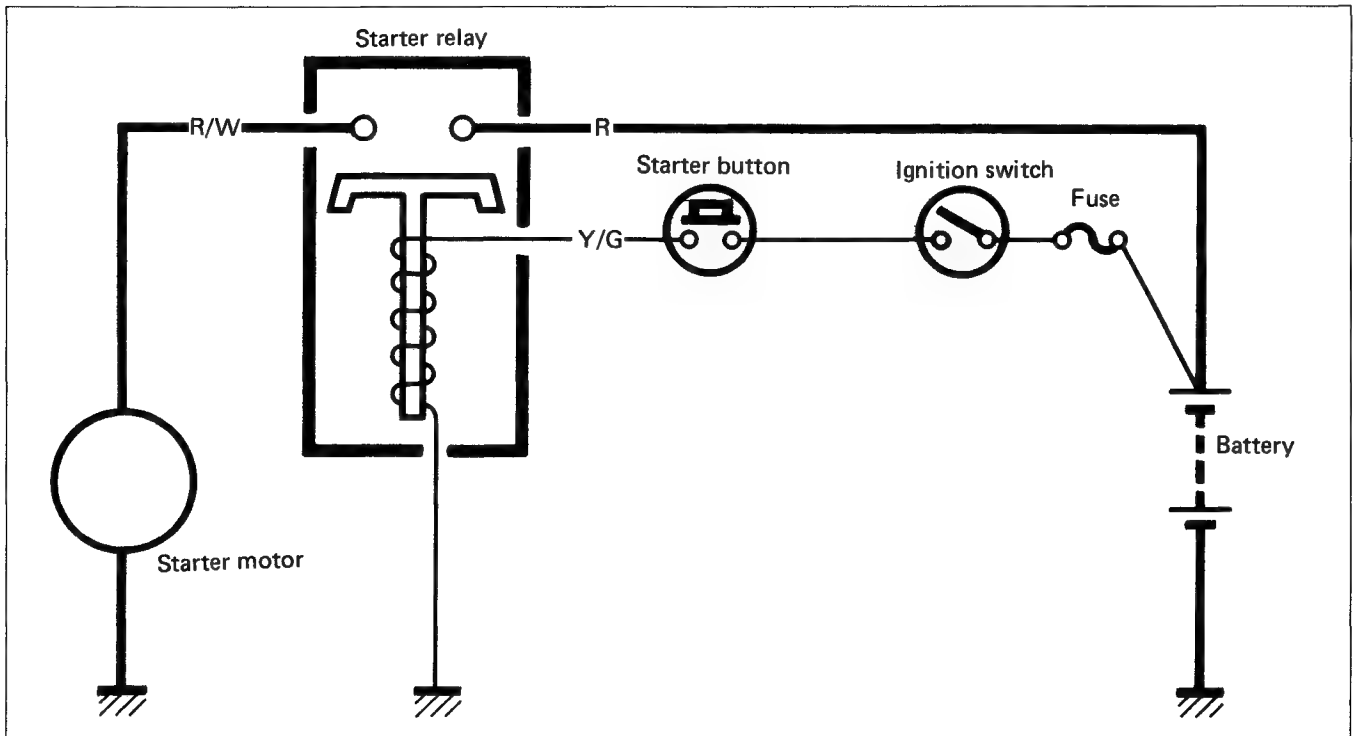
- Apply Thread Lock Super "1303" to the bolts and tighten with specified torque.

99000-32030	Thread Lock Super "1303"
Tightening torque	8 – 12 N·m (0.8 – 1.2 kg-m)

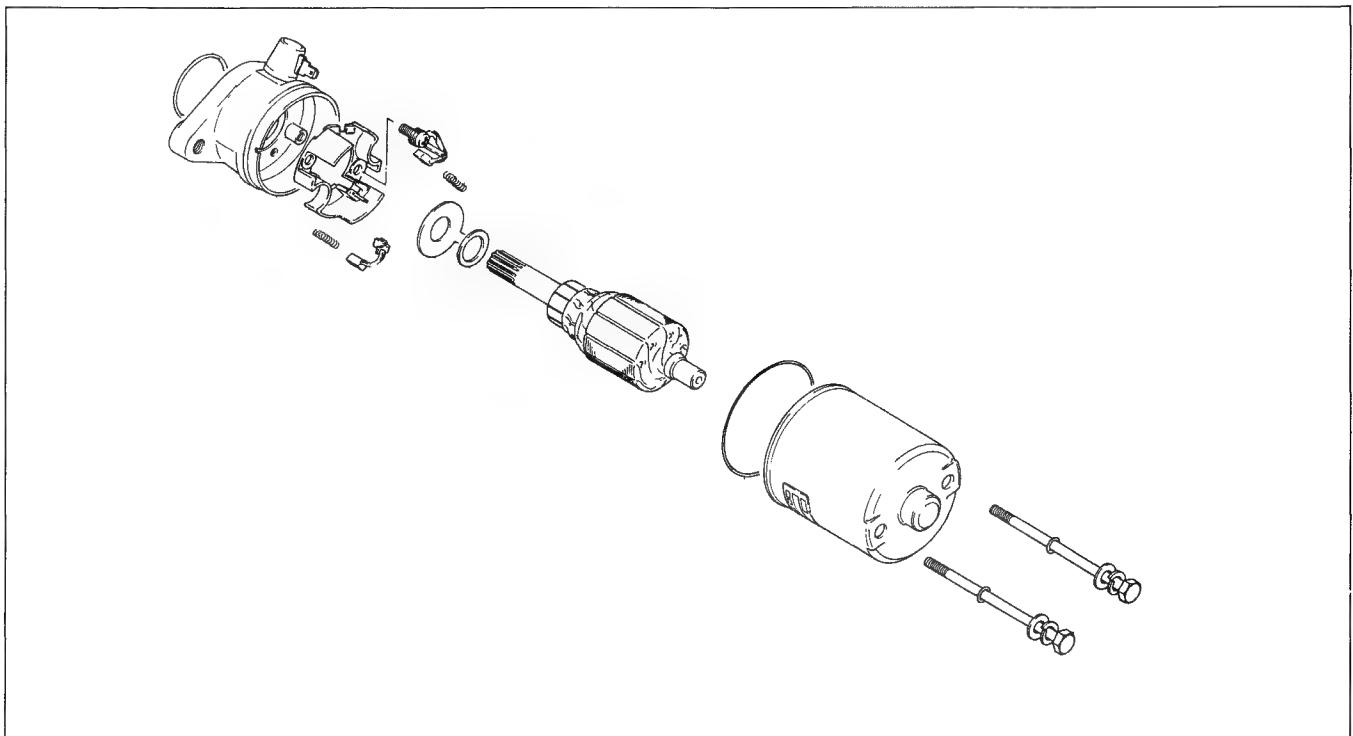


STARTER SYSTEM

The starter system is shown in the diagram below: namely, the starter motor, starter relay, starter button ignition switch and battery. Depressing the starter button (on the right handlebar switch box) energizes the relay, causing the contact points to close which connects the starter motor to the battery.

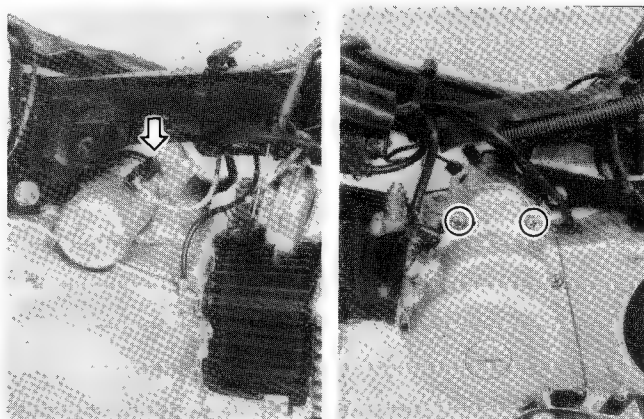


STARTER MOTOR



REMOVAL

- Remove the leg shield (refer to page 3-2).
- Disconnect the lead wire and loosen the mounting screws, and then remove the starter motor.

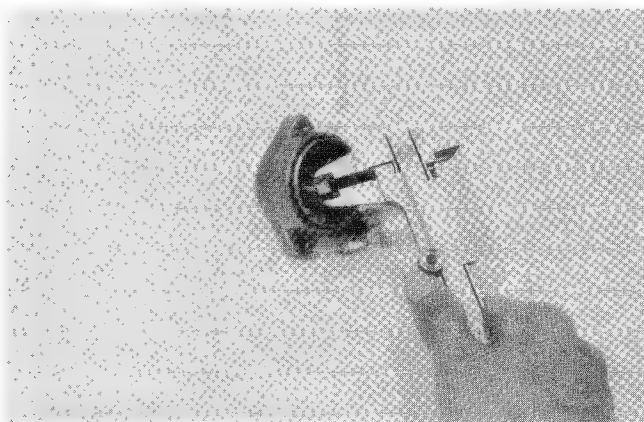


INSPECTION

CARBON BRUSHES

When the brushes are worn, the motor will be unable to produce sufficient torque, and the engine will be difficult to turn over. To prevent this, periodically, inspect the length of the brushes, replacing them when they are too short or chipping.

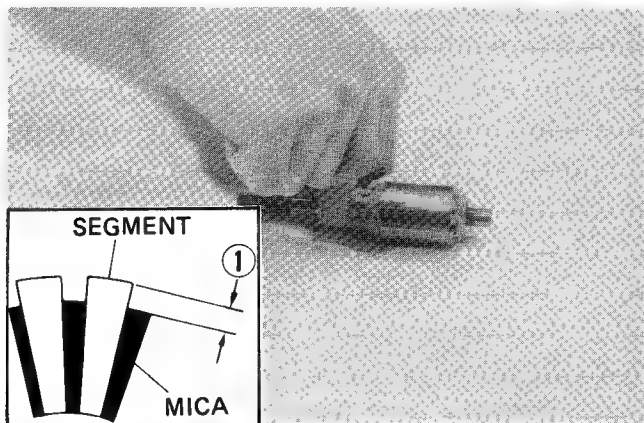
Service Limit	9.0 mm
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COMMUTATOR

If the commutator surface is dirty, starting performance decrease. Polish the commutator with #400 or similar fine emery paper when it is dirty. After polishing wipe the commutator with a clean dry cloth.

Check the commutator under cut ①.

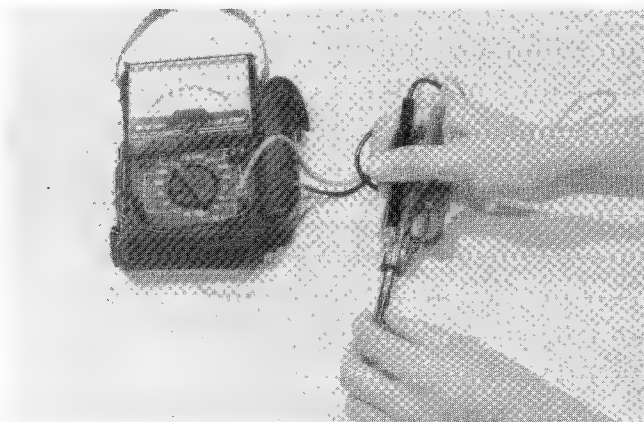


ARMATURE COIL

Using the pocket tester, check the coil for open and ground by placing probe pin on each commutator segment and rotor core (to test for ground) and on any two segments at various places (to test for open), with the brushes lifted off the commutator surface.

If the coil is found to be open-circuited or grounded replace the armature. Continuous use of a defective armature will cause the starter motor to suddenly fail.

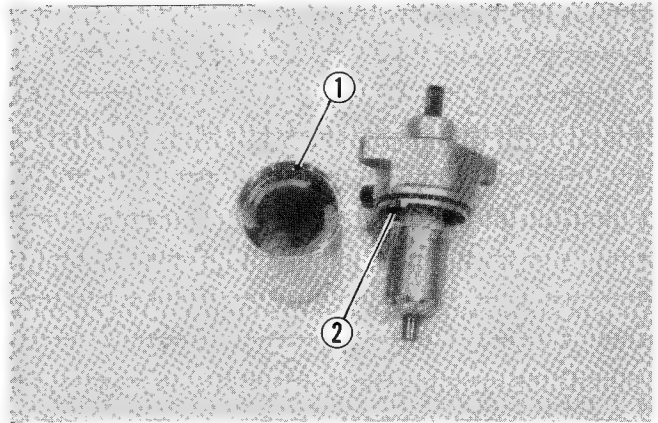
09900-25002	Pocket tester
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REASSEMBLY

BRUSH HOLDER AND HOUSING END

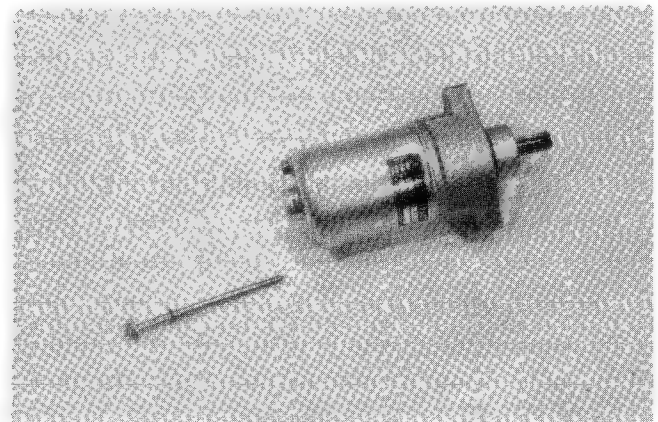
When fixing brush holder to starter motor case, align the protrusion ① of the starter motor case with the notch ② of the brush holder.



SECURING SCREWS

Apply Thread Lock "1342" to starter motor securing screws.

99000-32050	Thread Lock "1342"
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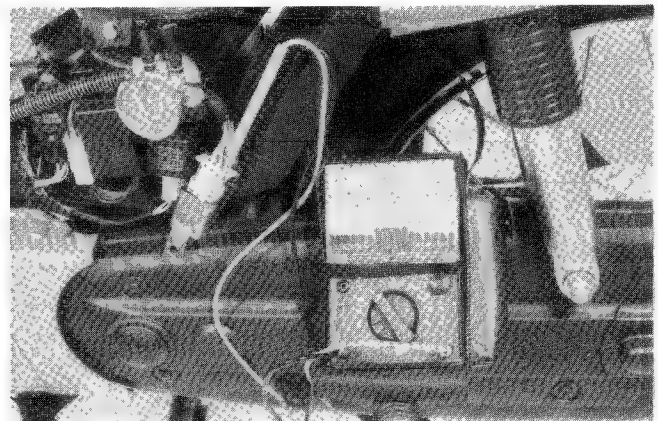
STARTER RELAY INSPECTION

Disconnect lead wire of the starter motor at starter relay.

Turn on the ignition switch, inspect the continuity between the terminals, positive and negative, when pushing the starter button.

If the starter relay is in sound condition, continuity is found.

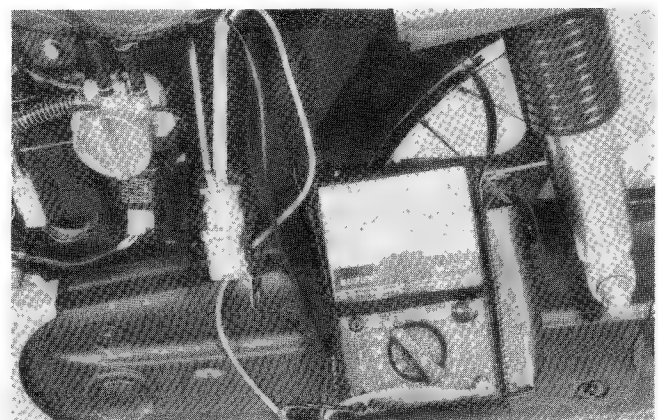
09900-25002	Pocket tester
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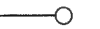
Check the coil for "open", "ground" and ohmic resistance. The coil is in good condition if the resistance is as follows.

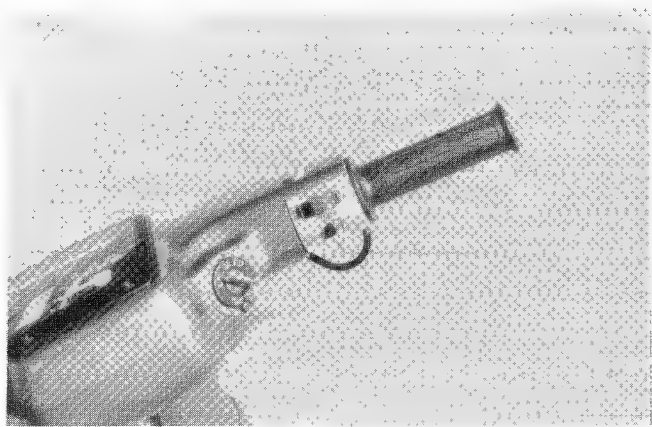
09900-25002	Pocket tester
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STD resistance Y/G - B/W	50 - 70 Ω
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SWITCH
STARTOR BUTTOM

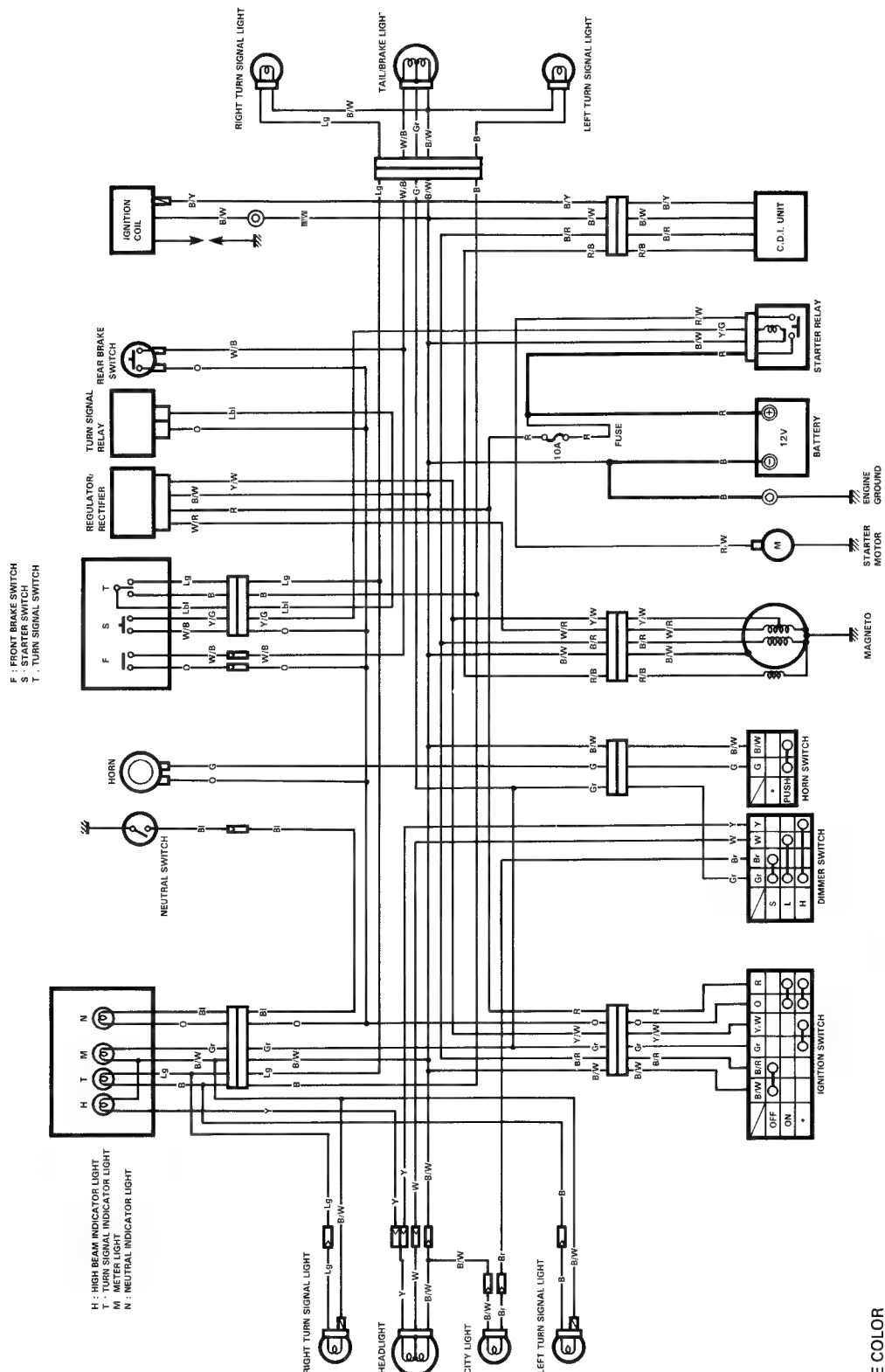
	Y/G	W/B
.		
ON		



SERVICE DATA
ELECTRICAL

ITEM	SPECIFICATION
Starter motor brush length	Limit 9.0 mm
Commutator under cut	Limit 0.2 mm
Starter relay resistance	50 – 70 Ω

WIRING DIAGRAM



F : FRONT BRAKE SWITCH
S : STARTER MOTOR
T : TURN SIGNAL SWITCH

H : HIGH BEAM INDICATOR LIGHT
T : TURN SIGNAL INDICATOR LIGHT
M : METER LIGHT
N : NEUTRAL INDICATOR LIGHT

WIRE COLOR

- B Black
- Bl Blue
- Br Brown
- G Green
- Gr Gray
- Lbl Light blue
- Lg Light green
- O Orange
- R Red
- W White
- Y Yellow
- B/R Black with Red tracer
- B/W Black with White tracer
- B/Y Black with Yellow tracer
- R/B Red with Black tracer
- R/W Red with White tracer
- W/B White with Black tracer
- W/R White with Red tracer
- Y/G Yellow with Green tracer
- Y/W Yellow with White tracer

FB100R/100DR ('94-MODEL)

CONTENTS

<i>SPECIFICATIONS.....</i>	<i>9-1</i>
<i>SERVICE DATA</i>	<i>9-3</i>

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length.....	1 870 mm (73.6 in)
Overall width.....	635 mm (25.0 in)
Overall height.....	1 000 mm (39.4 in)
Wheelbase.....	1 190 mm (46.9 in)
Ground clearance.....	130 mm (5.1 in)
Dry mass.....	76 kg (167 lbs).....FB100
	79 kg (174 lbs).....FB100D

ENGINE

Type.....	Four-stroke, air-cooled, OHC
Bore.....	51.0 mm (2.008 in)
Stroke.....	48.8 mm (1.921 in)
Piston displacement.....	99 cm ³ (6.0 cu. in)
Compression ratio.....	9.3 : 1
Carburetor.....	VM16SH, single
Air cleaner.....	Polyurethane foam element
Starter system.....	Kick FB100
	Starter motor FB100D
Lubrication system.....	Wet sump

TRANSMISSION

Clutch.....	Wet shoe, automatic, centrifugal type
Transmission.....	3-speed
Gearshift pattern.....	All-down
Primary reduction.....	3.823 (65/17)
Final reduction.....	2.285 (32/14)
Gear ratios, Low.....	3.400 (34/10)
2nd.....	1.812 (29/16)
Top.....	1.200 (24/20)
Drive chain.....	D.I.D. 428 or RK428, 94 links

CHASSIS

Front suspension.....	Leading link, oil damped
Rear suspension.....	Swinging arm, oil damped
Steering angle.....	45°
Caster.....	27° 30'
Trail.....	76 mm (3.0 in)
Turning radius.....	1.9 m (6.2 ft)
Front brake.....	Internal expanding
Rear brake.....	Internal expanding
Front tire size.....	2.25-17 4PR
Rear tire size.....	2.50-17 6PR

ELECTRICAL

Ignition type.....	SUZUKI "PEI"
Ignition timing.....	15° B.T.D.C. below 2150 r/min and 30° B.T.D.C. above 3000 r/min
Spark plug.....	NGK C6HA or NIPPONDENSO U20FS-L
Battery.....	6V 14.4 kC (4 Ah)/10 HR ... FB100
	12V 18.0 kC (5 Ah)/10 HR ... FB100D
Generator.....	Flywheel magneto
Fuse.....	10A
Headlight.....	6V 25/25W FB100
	12V 25/25W FB100D
Tail/Brake light.....	6V 3/10W FB100
	12V 5.2/18.4W ... FB100D
Turn signal light.....	6V 8W FB100
	12V 10W FB100D
Speedometer light.....	6V 3W FB100
	12V 3.4W FB100D
Neutral indicator light.....	6V 3W FB100
	12V 3.4W FB100D
High beam indicator light.....	6V 1.7W FB100
	12V 1.7W FB100D
Turn signal indicator light.....	6V 3W FB100
	12V 3.4W FB100D
Parking or position light.....	6V 3W FB100
	12V 3.4W FB100D

CAPACITIES

Fuel tank, including reserve.....	5.0 L (1.3/1.1 US/lmp gal)
reserve.....	0.7 L (1.5/1.2 US/lmp pt)
Engine oil.....	800 ml (1.7/1.4 US/lmp pt)

SERVICE DATA

VALVE + GUIDE

Unit: mm

ITEM	STANDARD		LIMIT
Valve diam.	IN.	24	—
	EX.	21	—
Valve lift	IN.	5.5	—
	EX.	5.3	—
Valve clearance (when cold)	IN.& EX.	0.03—0.07	—
Valve guide to valve stem clearance	IN.	0.020—0.053	0.35
	EX.	0.030—0.063	0.35
Valve guide I.D.	IN. & EX.	5.000—5.018	—
Valve stem O.D.	IN.	4.965—4.980	—
	EX.	4.955—4.970	—
Valve stem runout	IN. & EX.	—	0.05
Valve head thickness	IN. & EX.	—	0.5
Valve stem end length	IN. & EX.	—	2.6
Valve seat width	IN. & EX.	1.0	—
Valve head radial runout	IN. & EX.	—	0.03
Valve spring free length	INNER	—	29.6
	OUTER	—	34.5
Valve spring tension	INNER	5.58—6.42 kg at length 24 mm	—
	OUTER	10.69—12.31 kg at length 27 mm	—

CAMSHAFT + CYLINDER HEAD

Unit: mm

ITEM	STANDARD		LIMIT
Cam height	IN.	27.410	27.110
	EX.	27.270	26.970
Cam chain 20-pitch length	—		128.90
Rocker arm I.D.	IN. & EX.	10.003—10.018	—
Rocker arm shaft O.D.	IN. & EX.	9.981—9.990	—
Cylinder head distortion	—		0.05

CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD			LIMIT
Compression pressure	1 200—1 600 kPa (12—16 kg/cm ²)			1 000 kPa (10kg/cm ²)
Piston to cylinder clearance	0.03—0.04			0.120
Cylinder bore	51.000—51.015			51.100
Piston diam.	50.965—50.980 Measure at 11 from the skirt end.			50.880
Cylinder distortion	—			0.05
Piston ring free end gap	1st	R	Approx. 4.2	3.4
	2nd	R	Approx. 6.8	5.4

ITEM	STANDARD		LIMIT
Piston ring end gap	1st	0.10—0.30	0.70
	2nd	0.10—0.30	0.70
Piston ring to groove clearance	1st	———	0.180
	2nd	———	0.150
Piston ring groove width	1st	1.22—1.24	———
	2nd	1.21—1.23	———
	Oil	2.01—2.03	———
Piston ring thickness	1st	1.175—1.190	———
	2nd	1.175—1.190	———
Piston pin bore	14.002—14.008		14.035
Piston pin O.D.	13.996—14.000		13.976

CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD	LIMIT
Conrod small end I.D.	14.006—14.014	14.040
Conrod deflection	———	3.0
Conrod big end side clearance	0.10—0.45	1.0
Crank web to web width	40.0±0.1	———
Crankshaft thrust bearing thickness	0.60—1.30	———
Crankshaft thrust clearance	0.00—0.07	———
Crankshaft runout	———	0.05

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	2.117 (36/17)	———
Oil pressure (at 60°C, 140°F)	Above 20 kPa (0.2 kg/cm ²) Below 40 kPa (0.4 kg/cm ²) at 3 000 r/min.	———

CLUTCH

Unit: mm

ITEM	STANDARD		LIMIT
Clutch release screw	1/8 turn back		———
Drive plate thickness	2.3—2.5		2.0 (No groove)
Drive plate claw width	15.95—16.15		15.55
Driven plate thickness	No.1	2.1 ±0.1	1.6 (No groove)
	No.2	2.6 ±0.1	2.2 (No groove)
Clutch wheel I.D.	105.00—105.15		———
Clutch shoe O.D.	———		No groove
Clutch engagement	2 000±200 r/min.		———
Clutch lock-up	3 200±300 r/min.		———

TRANSMISSION + DRIVE CHAIN

Unit: mm Except ratio

ITEM		STANDARD	LIMIT
Primary reduction ratio		3.823 (65/17)	—
Final reduction ratio		2.285 (32/14)	—
Gear ratios	Low	3.400 (34/10)	—
	2nd	1.812 (29/16)	—
	Top	1.200 (24/20)	—
Shift fork to groove clearance	No 1, No.2	0.1—0.3	0.50
Shift fork groove width	No.1, No.2	4.5—4.6	—
Shift fork thickness	No.1, No.2	4.3—4.4	—
Drive chain	Type	D.I.D.: 428 TAKASAGO: RK428	—
	Links	94 links	—
	20-pitch length	—	259
Drive chain slack	10—15		—

CARBURETOR

ITEM	SPECIFICATION
Carburetor type	MIKUNI VM16SH
Bore size	16 mm
I.D. No.	30A11
Idle r/min.	1 400 ± 100 r/min.
Float height	16.0 ± 1.0 mm
Main jet (M.J.)	# 95
Main air jet (M.A.J.)	1.7 mm
Jet needle (J.N.)	3N8-4th
Needle jet (N.J.)	E-1
Cut-away (C.A.)	3.5
Pilot jet (P.J.)	# 15
Pilot outlet (P.O.)	1.0 mm
Air screw (A.S.)	1½ turns back
Valve seat (V.S.)	1.5 mm
Starter jet (G.S.)	# 22.5
Throttle cable play	*3—6 mm

ELECTRICAL

Unit: mm

ITEM	SPECIFICATION		NOTE
Ignition timing	15° B.T.D.C. Below 2 150 r/min. and 30° B.T.D.C. Above 3 500 r/min.		
Spark plug	Type	NGK: C6HA ND: U20FS-L	
	Gap	0.6—0.7	
Spark performance	Over 8 at 1 atm.		
Ignition coil resistance	Primary	B/Y—Ground 0—1 Ω	
	Secondary	Plug cap—Ground 13—20 kΩ	

Asterisk mark (*) indicates the new "R" model specification.

ITEM		SPECIFICATION		NOTE
Magneto coil resistance		Lighting	Y/W—B/W 0—1 Ω	
		Charging	W/R—B/W 0—1 Ω	
		Power surce	B/R—B/W 80—140 Ω	
		Pick up	R/B—B/W 80—120 Ω	
Regulated voltage	FB100DR	13.0—16.0V at 5 000 r/min.		Night time
	FB100R	9.0—11.0V at 5 000 r/min.		Night time
Battery		Type designation	YB5L-B	FB100DR
		Capacity	12V 5Ah/10HR	
		Standard electrolyte S.G.	1.28 at 20°C	
		Type designation	6N4-2A	FB100R
		Capacity	6V 4Ah/10HR	
		Standard electrolyte S.G.	1.26 at 20°C	
Fuse size		Main	10A	

WATTAGE

Unit:W

ITEM		SPECIFICATION	
		FB100R (6V)	FB100DR (12V)
Headlight	HI	25	←
	LO	25	←
Parking or position light		3	3.4
Tail/Brake light		3/10	5.2/18.4
Turn signal light		8	10
Turn signal indicator light		3	3.4
Speedometer light		3	3.4
High beam indicator light		1.7	←
Neutral indicator light		3	3.4

BRAKE + WHEEL

Unit: mm

ITEM	STANDARD		LIMIT
Front brake cable play	15 – 25		—
Rear brake pedal free travel	20 – 30		—
Rear brake pedal height	10		—
Brake drum I.D.	Front	—	110.7
	Rear	—	110.7
Brake shoe O.D.	—		106
Wheel rim runout	Axial	—	2.0
	Radial	—	2.0
Wheel axle runout	Front	—	0.25
	Rear	—	0.25
Tire size	Front	2.25 – 17 4PR	—
	Rear	2.50 – 17 6PR	—
Tire tread depth	Front	—	1.6
	Rear	—	1.6

SUSPENSION

Unit: mm

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	40	—	
Rear wheel travel	81	—	
Swingarm pivot shaft runout	—	0.6	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	NORMAL RIDING			
	SOLO RIDING		DUAL RIDING	
	kPa	kg/cm ²	kPa	kg/cm ²
FRONT	175	1.75	175	1.75
REAR	225	2.25	280	2.80

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.		
Fuel tank including reserve	5.0 L		
	0.7 L		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	800 ml	
	Overhaul	840 ml	

FB100S/100DS ('95-MODEL)

CONTENTS

<i>SPECIFICATIONS.....</i>	<i>10-1</i>
<i>SERVICE DATA</i>	<i>10-3</i>

SPECIFICATIONS

DIMENSIONS AND DRY MASS

Overall length.....	1 870 mm (73.6 in)
Overall width.....	635 mm (25.0 in)
Overall height.....	1 000 mm (39.4 in)
Wheelbase.....	1 190 mm (46.9 in)
Ground clearance.....	130 mm (5.1 in)
Dry mass.....	76 kg (167 lbs).....FB100
	79 kg (174 lbs).....FB100D

ENGINE

Type.....	Four-stroke, air-cooled, OHC
Bore.....	51.0 mm (2.008 in)
Stroke.....	48.8 mm (1.921 in)
Piston displacement.....	99 cm ³ (6.0 cu. in)
Compression ratio.....	9.3 : 1
Carburetor.....	VM16SH, single
Air cleaner.....	Polyurethane foam element
Starter system.....	Kick FB100
	Starter motor FB100D
Lubrication system.....	Wet sump

TRANSMISSION

Clutch.....	Wet shoe, automatic, centrifugal type
Transmission.....	3-speed
Gearshift pattern.....	All-down
Primary reduction.....	3.823 (65/17)
Final reduction.....	2.285 (32/14)
Gear ratios, Low.....	3.400 (34/10)
2nd.....	1.812 (29/16)
Top.....	1.200 (24/20)
Drive chain.....	D.I.D. 428 or RK428, 94 links

CHASSIS

Front suspension.....	Leading link, oil damped
Rear suspension.....	Swinging arm, oil damped
Steering angle.....	45°
Caster.....	27° 30'
Trail.....	76 mm (3.0 in)
Turning radius.....	1.9 m (6.2 ft)
Front brake.....	Internal expanding
Rear brake.....	Internal expanding
Front tire size.....	2.25-17 4PR
Rear tire size.....	2.50-17 6PR

ELECTRICAL

Ignition type.....	SUZUKI "PEI"
Ignition timing.....	15° B.T.D.C. below 2150 r/min and 30° B.T.D.C. above 3000 r/min
Spark plug.....	NGK C6HA or NIPPONDENSO U20FS-L
Battery.....	6V 14.4 kC (4 Ah)/10 HR ... FB100
	12V 18.0 kC (5 Ah)/10 HR ... FB100D
Generator.....	Flywheel magneto
Fuse.....	10A
Headlight.....	6V 25/25W FB100
	12V 25/25W FB100D
Tail/Brake light.....	6V 3/10W FB100
	12V 5.2/18.4W ... FB100D
Turn signal light.....	6V 8W FB100
	12V 10W FB100D
Speedometer light.....	6V 3W FB100
	12V 3.4W FB100D
Neutral indicator light.....	6V 3W FB100
	12V 3.4W FB100D
High beam indicator light.....	6V 1.7W FB100
	12V 1.7W FB100D
Turn signal indicator light.....	6V 3W FB100
	12V 3.4W FB100D
Parking or position light.....	6V 3W FB100
	12V 3.4W FB100D

CAPACITIES

Fuel tank, including reserve.....	5.0 L (1.3/1.1 US/Imp gal)
reserve.....	0.7 L (1.5/1.2 US/Imp pt)
Engine oil.....	800 ml (1.7/1.4 US/Imp pt)

SERVICE DATA

VALVE + GUIDE

Unit: mm

ITEM	STANDARD		LIMIT
Valve diam.	IN.	24	—
	EX.	21	—
Valve lift	IN.	5.5	—
	EX.	5.3	—
Valve clearance (when cold)	IN. & EX.	0.03—0.07	—
Valve guide to valve stem clearance	IN.	0.020—0.053	0.35
	EX.	0.030—0.063	0.35
Valve guide I.D.	IN. & EX.	5.000—5.018	—
Valve stem O.D.	IN.	4.965—4.980	—
	EX.	4.955—4.970	—
Valve stem runout	IN. & EX.	—	0.05
Valve head thickness	IN. & EX.	—	0.5
Valve stem end length	IN. & EX.	—	2.6
Valve seat width	IN. & EX.	1.0	—
Valve head radial runout	IN. & EX.	—	0.03
Valve spring free length	INNER	—	29.6
	OUTER	—	34.5
Valve spring tension	INNER	5.58—6.42 kg at length 24 mm	—
	OUTER	10.69—12.31 kg at length 27 mm	—

CAMSHAFT + CYLINDER HEAD

Unit: mm

ITEM	STANDARD		LIMIT
Cam height	IN.	27.410	27.110
	EX.	27.270	26.970
Cam chain 20-pitch length	—		128.90
Rocker arm I.D.	IN. & EX.	10.003—10.018	—
Rocker arm shaft O.D.	IN. & EX.	9.981—9.990	—
Cylinder head distortion	—		0.05

CYLINDER + PISTON + PISTON RING

Unit: mm

ITEM	STANDARD		LIMIT
Compression pressure	1 200—1 600 kPa (12—16 kg/cm ²)		1 000 kPa (10kg/cm ²)
Piston to cylinder clearance	0.03—0.04		0.120
Cylinder bore	51.000—51.015		51.100
Piston diam.	50.965—50.980 Measure at 11 from the skirt end.		50.880
Cylinder distortion	—		0.05
Piston ring free end gap	1st	R	Approx. 4.2
	2nd	R	Approx. 6.8

ITEM	STANDARD		LIMIT
Piston ring end gap	1st	0.10–0.30	0.70
	2nd	0.10–0.30	0.70
Piston ring to groove clearance	1st	—	0.180
	2nd	—	0.150
Piston ring groove width	1st	1.22–1.24	—
	2nd	1.21–1.23	—
	Oil	2.01–2.03	—
Piston ring thickness	1st	1.175–1.190	—
	2nd	1.175–1.190	—
Piston pin bore	14.002–14.008		14.035
Piston pin O.D.	13.996–14.000		13.976

CONROD + CRANKSHAFT

Unit: mm

ITEM	STANDARD	LIMIT
Conrod small end I.D.	14.006–14.014	14.040
Conrod deflection	—	3.0
Conrod big end side clearance	0.10–0.45	1.0
Crank web to web width	40.0±0.1	—
Crankshaft thrust bearing thickness	0.60–1.30	—
Crankshaft thrust clearance	0.00–0.07	—
Crankshaft runout	—	0.05

OIL PUMP

ITEM	STANDARD	LIMIT
Oil pump reduction ratio	2.117 (36/17)	—
Oil pressure (at 60°C, 140°F)	Above 20 kPa (0.2 kg/cm ²) Below 40 kPa (0.4 kg/cm ²) at 3 000 r/min.	—

CLUTCH

Unit: mm

ITEM	STANDARD		LIMIT
Clutch release screw	1/8 turn back		—
Drive plate thickness	2.3–2.5		2.0 (No groove)
Drive plate claw width	15.95–16.15		15.55
Driven plate thickness	No.1	2.1 ±0.1	1.6 (No groove)
	No.2	2.6 ±0.1	2.2 (No groove)
Clutch wheel I.D.	105.00–105.15		—
Clutch shoe O.D.	—		No groove
Clutch engagement	2 000±200 r/min.		—
Clutch lock-up	3 200±300 r/min.		—

TRANSMISSION + DRIVE CHAIN

Unit: mm Except ratio

ITEM		STANDARD		LIMIT	
Primary reduction ratio		3.823 (65/17)		——	
Final reduction ratio		2.285 (32/14)		——	
Gear ratios	Low	3.400 (34/10)		——	
	2nd	1.812 (29/16)		——	
	Top	1.200 (24/20)		——	
Shift fork to groove clearance	No 1, No.2	0.1—0.3		0.50	
Shift fork groove width	No.1, No.2	4.5—4.6		——	
Shift fork thickness	No.1, No.2	4.3—4.4		——	
Drive chain		Type	TAKASAGO: RK428		——
		Links	94 links		——
		20-pitch length	——		259
Drive chain slack		10—15		——	

CARBURETOR

ITEM		SPECIFICATION
Carburetor type		MIKUNI VM16SH
Bore size		16 mm
I.D. No.		30A11
Idle r/min.		1 400 ± 100 r/min.
Float height		16.0 ± 1.0 mm
Main jet	(M.J.)	#95
Main air jet	(M.A.J.)	1.7 mm
Jet needle	(J.N.)	3N8-4th
Needle jet	(N.J.)	E-1
Cut-away	(C.A.)	3.5
Pilot jet	(P.J.)	#15
Pilot outlet	(P.O.)	1.0 mm
Air screw	(A.S.)	1½ turns back
Valve seat	(V.S.)	1.5 mm
Starter jet	(G.S.)	#22.5
Throttle cable play		3—6 mm

ELECTRICAL

Unit: mm

ITEM	SPECIFICATION		NOTE
Ignition timing	15° B.T.D.C. Below 2 150 r/min. and 30° B.T.D.C. Above 3 500 r/min.		
Spark plug	Type	NGK: C6HA ND: U20FS-L	
	Gap	0.6—0.7	
Spark performance	Over 8 at 1 atm.		
Ignition coil resistance	Primary	B/Y—Ground 0—1 Ω	
	Secondary	Plug cap—Ground 13—20 kΩ	

ITEM		SPECIFICATION		NOTE
Magneto coil resistance		Lighting	Y/W—B/W 0—1 Ω	
		Charging	W/R—B/W 0—1 Ω	
		Power source	B/R—B/W 90—140 Ω	
		Pick up	R/B—B/W 80—120 Ω	
Regulated voltage	FB100DR	13.0—16.0V at 5 000 r/min.		Night time
	FB100R	9.0—11.0V at 5 000 r/min.		Night time
Battery		Type designation	YB5L-B	FB100DR
		Capacity	12V 5Ah/10HR	
		Standard electrolyte S.G.	1.28 at 20°C	
		Type designation	6N4-2A	FB100R
		Capacity	6V 4Ah/10HR	
		Standard electrolyte S.G.	1.26 at 20°C	
Fuse size		Main	10A	

WATTAGE

Unit:W

ITEM		SPECIFICATION	
		FB100R (6V)	FB100DR (12V)
Headlight	HI	25	←
	LO	25	←
Parking or position light		3	3.4
Tail/Brake light		3/10	5.2/18.4
Turn signal light		8	10
Turn signal indicator light		3	3.4
Speedometer light		3	3.4
High beam indicator light		1.7	←
Neutral indicator light		3	3.4

BRAKE + WHEEL

Unit: mm

ITEM	STANDARD		LIMIT
Front brake cable play	15—25		—
Rear brake pedal free travel	20—30		—
Rear brake pedal height	10		—
Brake drum I.D.	Front	—	110.7
	Rear	—	110.7
Brake shoe O.D.	—		106
Wheel rim runout	Axial	—	2.0
	Radial	—	2.0
Wheel axle runout	Front	—	0.25
	Rear	—	0.25
Tire size	Front	2.25—17 4PR	—
	Rear	2.50—17 6PR	—
Tire tread depth	Front	—	1.6
	Rear	—	1.6

SUSPENSION

Unit: mm

ITEM	STANDARD	LIMIT	NOTE
Front fork stroke	40	—	
Rear wheel travel	81	—	
Swingarm pivot shaft runout	—	0.6	

TIRE PRESSURE

COLD INFLATION TIRE PRESSURE	NORMAL RIDING			
	SOLO RIDING		DUAL RIDING	
	kPa	kg/cm ²	kPa	kg/cm ²
FRONT	175	1.75	175	1.75
REAR	225	2.25	280	2.80

FUEL + OIL

ITEM	SPECIFICATION		NOTE
Fuel type	Gasoline used should be graded 85-95 octane or higher. An unleaded gasoline is recommended.		
Fuel tank including reserve reserve	5.0 L		
	0.7 L		
Engine oil type	SAE 10W/40, API SE or SF		
Engine oil capacity	Change	800 ml	
	Overhaul	840 ml	

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